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Make good robots for clients.



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**CHENGDU CRP ROBOT TECHNOLOGY CO., LTD.**

Tel: (86) 028-84203568

E-mail: [sales@crprobot.com](mailto:sales@crprobot.com)

<http://www.crprobot.com/en/>

Add: No. 188 Huayue Road, Chenghua District, Chengdu, Sichuan, China

**CHENGDU CRP ROBOT TECHNOLOGY CO., LTD.**



# COMPANY INTRODUCTION

## CROBOTP



Chengdu CRP Robot Technology CO. Ltd. (hereinafter referred to as "CRP") was established in 2012, located in Longtan New Economy Function Zone, Chenghua District, Chengdu, China. It is a national high-tech enterprise focused on the research and development, production, sales and service of industrial robots and core components. It is the only industrial robot enterprise leading the preparation of four national standards in southwest China. CRP has been awarded as one of the 100 key new economy cultivation enterprises for three consecutive years, and it is also certified as National SRDI (Specialized, Refinement, Differential, and Innovation) Small Giant enterprise and Gazella Company. CRP's core technical researchers have been engaged in the robot control system since 2007. Till now, CRP has more than 300 employees, including over 120 technical researchers and has obtained more than 100 kinds of intellectual property rights authorization, and CRP is one of the few enterprises with whole industrial chain of industrial robots in China.

CRP has been deeply engaged in the fields of industrial robot core control system and intelligent industrial robot complete equipment for 9 years. It builds a "three-core" ecological chain around core suppliers, core teams and core partners and continues to give full play to the three advantages of industrial robot control system, intelligent industrial robot complete equipment and software technology.

At present, the annual output value of CRP exceeds RMB 300 million with more than 500 customer groups all over the world. CRP's robots are exported to Britain, the United States, Germany, Hungary, Vietnam, Thailand and etc, which are widely applied in spraying, welding, handling, palletizing, polishing and grinding. CRP has built the first "Domestic Robot and Core Component Base" with an area of more than 30,000 square meters in southwest China and meanwhile integrated all resources in industrial robot field to establish an "Industrial Alliance". After completion, the base will serve as robot science popularization education platform, robot operation training platform, robot cooperative research and development platform and industrial talent incubation platform to integrate industrial resources. With all these efforts, CRP will comprehensively carry out Artificial Intelligence + Science and Technology Service.

### Enterprise honor

- 2022** • CRP was selected by the Ministry of Industry and the Ministry of Information into "the National SRDI (Specialized, Refinement, Differential, and Innovation) Small Giant Enterprises List"
- 2021** • CRP was identified as the first batch of Sichuan Province New Economy Demonstration Enterprise and the third batch of National SRDI (Specialized, Refinement, Differential, and Innovation) Small Giant business.
- 2020** • CRP was officially rewarded as Provincial Enterprise Technology Center in Sichuan  
CRP was identified as the Gazella Companies in Sichuan Province and the Unicorn Company in Chengdu  
CRP has completed the certification of quality management system, enterprise credit AAA grade, safety production standardization and Made-in-China(SCS) certified supplier.
- 2019** • CRP was identified as SRDI (Specialized, Refinement, Differential, and Innovation) Enterprises in Sichuan Province.  
CRP won the award of "New Economy Business Revenue Top 10 and New Economy Taxpayer Companies Top 10" in Chenghua Longtan headquarters New Town.
- 2018** • CRP was selected as a Unicorn Company in Chenghua District  
CRP was awarded the "New Seeding List of China's Entrepreneurial Enterprises—the New Generation Enterprise Award" by Securities Times.  
CRP was selected as one of "the Top 50 Artificial Intelligence in 2018" by Cyzone  
CRP was selected as one of "the New Generation Enterprise Award" by CIROS Committee.  
CRP Industrial robot control system V1.0 was identified as the first version of software products in Chengdu.
- 2018-2020** • CRP has been selected as one of the Top 100 Key cultivation enterprises of Chengdu New Economy for three consecutive years
- 2016-2018** • CRP has been awarded the "Golden Finger Award"-- Best Robot Core Components of the Year, the New Generation Enterprise and Innovation Award" for three consecutive years by China International Robot Exhibition Committee.
- 2015-2020** • CRP has won the Capek Prize-- The Highest Award in the Robot Controller Category for six consecutive years from 2015 to 2020 (Optimal Robot Controller)
- 2014** • CRP was recognized as Double Soft Enterprise and awarded as 2014 Excellent Controller Brand in China Industrial Robot Industry by China Robot.



# Production Demonstration

**Intelligent Sensor**  
Expanding the depth and breadth  
of the industry  
Simple and easy to use  
Comprehensive and full-featured



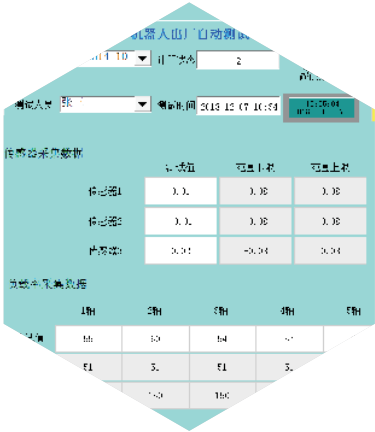
**Special integrated  
drive-controller for robot**  
We created the high-performance  
integrated drive-controller  
by our professional team.



**Robot Controller**  
Years of cultivation.  
Tens of thousands of application.  
More than 50% market share.



**Factory Test**  
13 fully automated tests ensure  
consistency of the batch product.



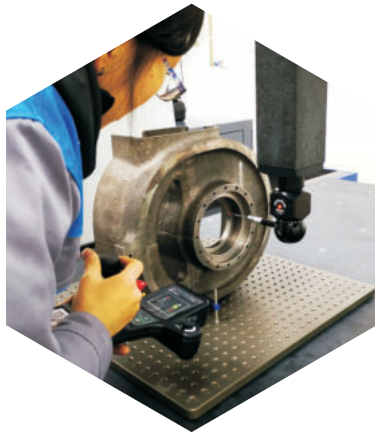
**Type Test**  
16 major items test and 64  
minor items test ensure reliability  
and quality



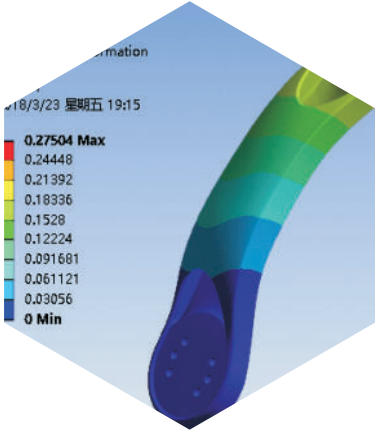
**Production Process**  
Strict production process,  
consistent and efficient.



**Component Inspection**  
The strict inspection of components  
ensures accuracy and quality.



**Mechanical Design**  
Strictly and elaborately designed by  
our precise transmission design team.



# CRP-E60-G4

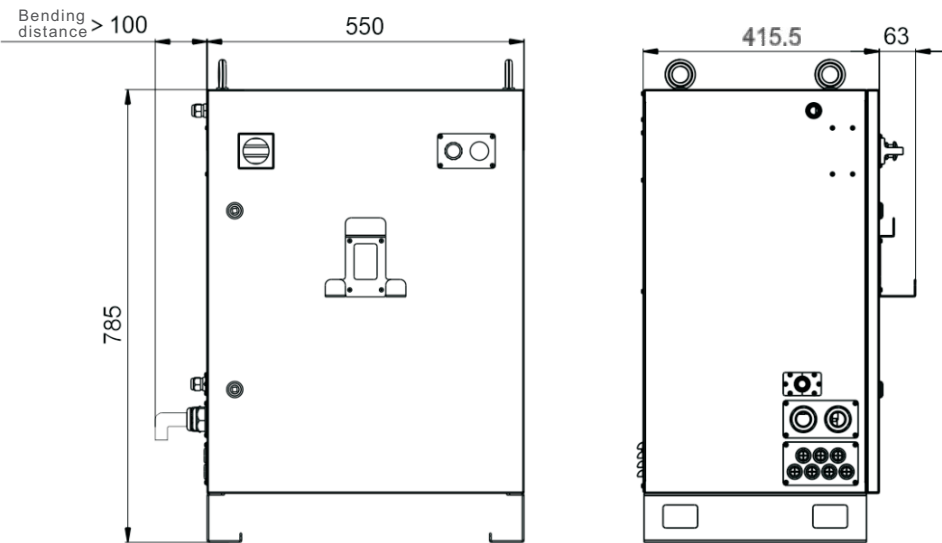
INDUSTRIAL ROBOT  
ELECTRICAL CABINET



CABINET TECHNICAL INDEX

Teaching pendant	8-inch TFT-LCD, keyboard + touch screen, mode selection switch, safety switch, emergency stop button
User memory	200MB
Controlled Axes	6+2(The standard configuration is 6 axes, and the external 2 axes needs to be selected)
Interface	Digital I/O interface,24 input/output(expandable COM) (welding robot have 1 more remote box,will occupy 2 couples of I/O signals)
	1 encoder signal interface(position tracking)
	Rj45 network port(modbus TCP/IP)
Operation mode	2 USB interface
	Teach play remote
Coordinate system	Joint coordinate, rectangular coordinate, user coordinate, tool coordinate, base coordinate
Abnormal detection function	Emergency stop abnormal,servo abnormal,user coordinate abnormal, tool coordinates abnormal,safety maintenance,arcing abnormal, etc
Robot safety	External emergency stop, anti-collision, safety latch and other interfaces; MC safety circuit, servo softening, etc
Reserved specific interface	arc welding interface, workstation interface
Software package	welding,handling,palletizing and painting available
Others	Built-in PLC, regenerative braking(optional), encoder interface (supporting synchronous belt),arc tracking and accessories(optional), vision software(optional),laser tracking software(optional) etc
Connecting cable	3m
Power supply	Three phase 380V 50-60HZ
Dimension	550mm×785mm×410mm
Weight	90KG

CABINET DIMENSIONAL DRAWING



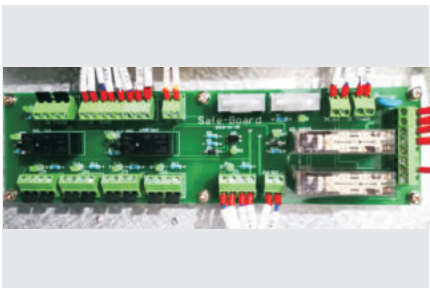
Three-phase three-wire power filter



Double switching power supply



Three-phase dry-type servo isolation transformer



Built-in safety circuit



# CRP-G5-CD60

## INDUSTRIAL ROBOT ELECTRICAL CABINET



### THE INTRODUCTION AND FEATURES OF ELECTRICAL CABINET

As an iterative product of G3 electrical cabinet, the new generation G5 electrical cabinet not only inherits excellent performance, but also has better performance in safety, stability and operability. CRP G5 electrical cabinet has compact structure and reasonable design of heat dissipation and dust prevention. With compact design, G5 electrical cabinet is more flexible in on-site layout. Besides, external IO and data interface provide a great convenience in field application and operation. As the slogan "High quality and Good service" goes, CRP new G5 electrical cabinet upgrade to provide you with better experience.

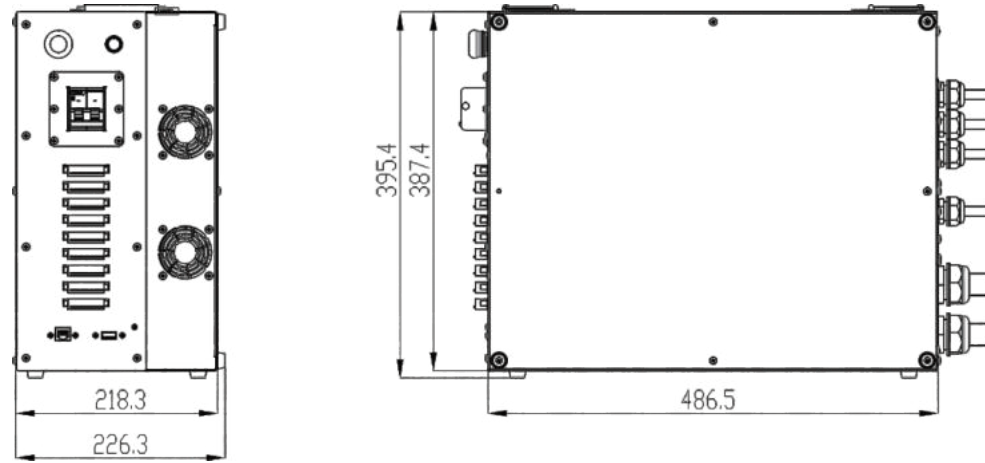
### FUNCTIONAL FEATURES

- G5 electric cabinet is more compact and occupies less space;
- With multiple installation methods, G5 electric cabinet has more flexible layout;
- Adopt quick plug to achieve wiring more convenient;
- Adopt independent air duct to prevent dust from entering and ensure long-term tability;
- With multiple interfaces, G5 electrical cabinet supports multiple communication protocols

### CABINET TECHNICAL INDEX

Teaching pendant	8-inch TFT-LCD, keyboard + touch screen, mode selection switch, safety switch, emergency stop button
User memory	200MB
Controlled Axes	6+2
Interface	Digital I/O interface,22 input/output(expandable COM)
	4-way 0~10V analog output, 12-bit accuracy(expandable COM)
	Encoder signal interface(position tracking)
	Ethernet communication interface,2 USB interface
Operation mode	Communication interface: RS484,RS232,CAN,Expandable: Profinet,cclink
	Teach, Reconstruct, Remote
	Point-to-point, straight line, circle
Coordinate system	Motion, Logic, Process, Operation
IP level	IP20
Input Power (including cable length)	Single-phase AC220V±15% 50/60Hz,PE ground cable
Interconnecting Cable	5M
Dimension	486.5×218.3×395.4mm
Weight	37.5KG
Installation environment	Indoor (avoid direct sunlight), no corrosive gas, ambient temperature: 0-55°;Storage temperature (-20-65°), 0-99% (no condensation);
Safety	External emergency stop, anti-collision ,safety bolt interface, etc.
Abnormal detection function	Abnormal stop, abnormal servo, abnormal user coordinates, abnormal tool coordinates, safety maintenance,etc.
Others	Built-in PLC, power off regeneration, encoder interface (support synchronous belt), arc tracking and accessories (optional), visual software (optional), laser tracking software (optional), etc.

### CABINET DIMENSIONAL DRAWING



# CRP-G6-CD40B

## INDUSTRIAL ROBOT ELECTRICAL CABINET



### THE INTRODUCTION AND FEATURES OF ELECTRICAL CABINET

- The electric cabinet is specially customized for 4-axis robot, which has the characteristics of compact structure, smaller volume, easy installation, lightweight and multiple functions.
- Built-in control system software independently developed by CRP can meet the requirements of high speed, exact performance of motion control and high reliability of robots. Besides, it can achieve more accurate trajectory control and faster beat in applications with smaller size and multiple functions

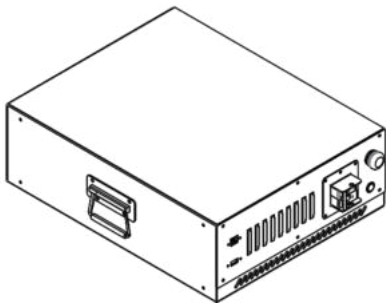
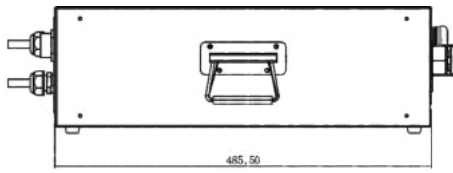
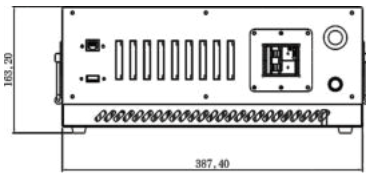
### FUNCTIONAL FEATURES

- Adopt split design to effectively keep dust out and improve stability
- Adopt quick plug to achieve wiring more convenient;
- Well-knit design makes the robot more convenient in small space.
- With multiple installations, G6 electric cabinet has more flexible layout;
- With multiple interfaces, G6 electrical cabinet supports diversiform communication protocols
- High power density and efficient heat dissipation
- High integration and small size

### CABINET TECHNICAL INDEX

Teaching pendant	8-inch TFT-LCD, keyboard + touch screen, mode selection switch, safety switch, emergency stop button
Controlled Axes	4
Interface	Digital I/O interface,24 input/output(expandable COM)
	2-way 0~10V analog output, 12-bit accuracy(expandable COM)
	Encoder signal interface(position tracking)
	Ethernet communication interface,2 USB interface
Operation mode	Communication interface: RS484,RS232,CAN,Expandable: Profinet,cclink
	Teach, Reproduction, Remote
	Point-to-point, straight line, circle
Coordinate system	Motion, Logic, Process, Operation
IP level	IP20
Input Power (including length)	Single-phase AC220V±15% 50/60Hz,PE ground cable
Interconnecting Cable	5M
Dimension	485.8X387.4X155.5mm
Weight	20KG
Installation environment	Indoor (avoid direct sunlight), no corrosive gas, ambient temperature: 0-55°;Storage temperature (-20-65°), 0-99% (no condensation);
Safety	External emergency stop, anti-collision ,safety bolt interface, etc.
Ground Resistance	<0.1Ω
Insulation Resistance	>100MΩ
Vibration Resistance	10<f<58.1HZ Amplitude:0.15mm
Impact-Resistance Strength	Max strength:15g Duration:11ms
EMC Testing Standard	IEC 61000-6-2
Abnormal detection	Abnormal stop, abnormal servo, abnormal user coordinates, abnormal tool coordinates, safety maintenance,etc.
Others	Built-in PLC, power off regeneration, encoder interface (support synchronous belt), arc tracking and accessories (optional), visual software (optional), laser tracking software (optional), etc.
Reserved Interfaces	Arc Welding Interface, Vision Interface, Remote interface, Station Interface
Software Packag	Welding/Handling/Vision/Tracking/Palletizing /Bending/Stamping/ Communication/Spraying

### CABINET DIMENSIONAL DRAWING





# CRP-G7-CDH80A

## INDUSTRIAL ROBOT ELECTRICAL CABINET



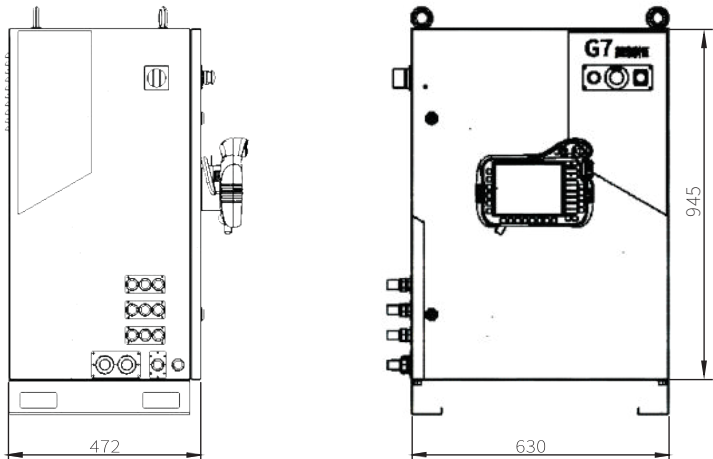
### FUNCTIONAL FEATURES

- Adopt split design  
G7 electrical cabinet is divided into power supply part and control part. The power supply part mainly focuses on heating devices so it adopts multi-group fan and air channel design to ensure good heat dissipation. The control part is isolated from the power supply part to prevent dust and oil pollution from entering and ensure the cleanliness of the control part. Besides, it can also avoid abnormal operation of the control part devices affected by dust and oil ollution.
- Equipped with safety emergency stop board independent of the control system, G7 electrical cabinet adopts imported forced disconnect relay to provide double circuit emergency stop to ensure the reliability of emergency stop.
- Automatic external power-on function  
It can greatly ensure the safety of the operator through the methods of automatic external power-on function
- Energy-saving mode  
It can effectively reduce standby energy consumption and avoid personal injury who is strayed in robots standby state.
- Adopt three-phase 380V power supply to direct power supply, which saves transformer and cost
- Adopt built-in three-phase filter to effectively isolate external interference and prevent internal interference output
- Double switching power supply design can avoid internal power interference
- It is convenient and simple to maintenance with split module design
- It can drive 50-220kg load with large output power.

### CABINET TECHNICAL INDEX

Main power source	Phase/voltage	Main circuit power supply: three-phase 380VAC (-20%~ +10%), 50/60Hz Control loop power supply: single-phase AC220VAC (-10%~ +10%), 50/60Hz
	Input Power	Maximum Power:16KW
Cooling Mode	Air Cooling	
Insulation and Withstand Voltage	Grounding AC2600VAC@50Hz, voltage withstand 1Min (except control part of power supply)	
Institutions algorithm	Vertical multi-joint series, vertical multi-joint parallelogram, vertical multi-joint L-shaped wrist robot, etc	
System Mode	Teach, Reproduction, Remote	
Stopping Resistor	Internal	
Regenerative Resistor	External	
Instruction System	Motion, Logic, Process, Operation	
Soft PLC	Ladder diagram editing, 5000 steps, 10MS cycle	
Application	Handling, welding, spraying, palletizing, cutting, etc	
Teaching pendant	8-inch TFT-LCD, keyboard + touch screen, mode selection switch, safety switch, emergency stop button	
User memory	400M	
Communication Mode	TCP/IP、ModbusTcp、ModbusRtu、CAN	
Controlled Axes	6+2 (The standard configuration is 6 axes, and the external axes need to be selected)	
Interference	Controller: 22DI, 22DO; Drive Units: 3DI, 3DO	
	4-way 0~10V analog output, 12-bit accuracy(expandable COM)	
	Double encoder signal interface(position tracking)	
	Robot terminal: maintenance switch, external emergency stop	
Protective Function	Ethernet、CAN、RS485、RS232	
	2 USB interface	
	Overcurrent, overvoltage, undervoltage, overheat, overload, overspeed, excessive position deviation, abnormal communication, etc	
Safety Mode	Associated emergency stop can rapidly stop the robot when abnormal signal occurs	
Environmental Specification	Installation Instruction	Indoor (avoid direct sunlight), no corrosive fog (avoid lampblack, flammable gas and dust)
	Altitude	Altitude: under 2000m
	Ambient Temperature	-20°C~55°C (If the ambient temperature exceeds 45°C, please keep the surrounding air to circulate)
	Storage Temperature	-20°C~55°C (Maximum temperature: 80°C for 72 hours without condensation)
	Humidity	Under 20~80 %RH (No condensation)
Connecting Cable	Random Vibration: Frequency: 20-500Hz, X Direction2.04m/s2, Y Direction7.4m/s2, Z Direction10.4m/s2Sine Sweep: Frequency: 10-58.1Hz Acceleration: under 10m/s2	
	Under 20~93%RH (No condensation)	
Dimension (MM)	630×939×472	
Weight (KG)	112KG	

### CABINET DIMENSIONAL DRAWING



# CRP-RH14-10-W

## INDUSTRIAL ROBOT WELDING APPLICATION



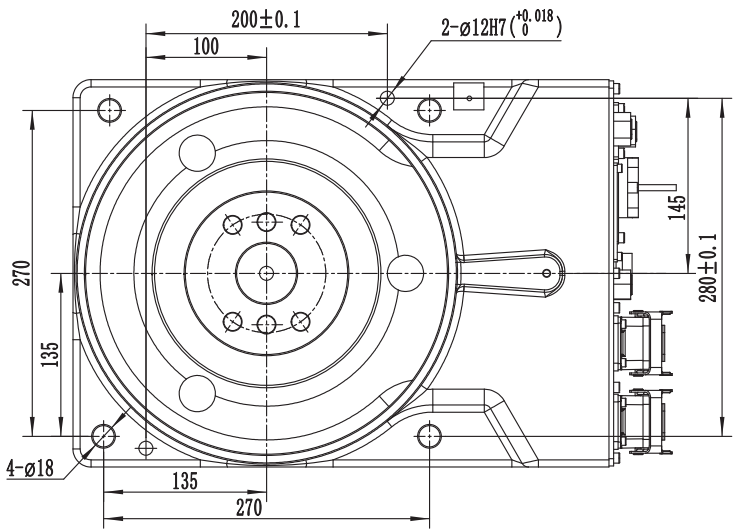
### FUNCTIONAL FEATURES

- The arm span is 1.4 meters. The design is highly compact and can be flexibly installed on the ground or upside down.
- With large working space, fast running speed and high repeated positioning accuracy, it is suitable for wide range of welding applications.
- The safety emergency stop board independent of the control system is equipped with, and the safety relay circuit is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- The robot body adopts highly flexible special cable.
- Built-in three-phase transformer makes 380V and 220V isolated to help the power supply more stable. Built-in three-phase filter can effectively improve the performance of EMC and EMI.
- The robot body is with dual-circuit gas pipe to meet the welding demand.
- The inner diameter of 6-axis middle hole is 44mm, it can meet the installation requirements of water-cooling torch and bellows torch.
- Highly flexible welding cable is built-in.

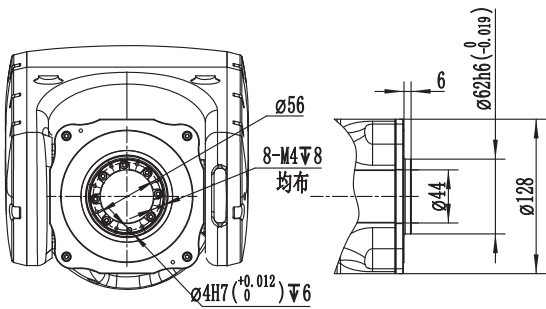
### ROBOT BODY TECHNICAL PARAMETERS

Model		CRP-RH14-10-W
Arm form		Vertical multiple joints
Degree of freedom		6 axis
Maximum payload		10KG
Repeated positioning accuracy		±0.08mm
Maximum reaching distance		1454mm
Robot body weight		170KG
Installation mode		Ground, upside down mounting, wall mounting
Maximum travel	axis 1	Ground/upside down mounting -167°~167°, wall mounting -30°~30°
	axis 2	-155°~90°
	axis 3	-175°~240°
	axis 4	-190°~190°
	axis 5	-105°~130°
	axis 6	-210°~210°
Maximum speed	axis 1	169°/S
	axis 2	169°/S
	axis 3	169°/S
	axis 4	301°/S
	axis 5	220°/S
	axis 6	743°/S
Allowable torque	axis 4	20N.m
	axis 5	20N.m
	axis 6	11N.m
Allowable moment of inertia	axis 4	0.5kg.m <sup>2</sup>
	axis 5	0.5kg.m <sup>2</sup>
	axis 6	0.16kg.m <sup>2</sup>
Installation environment	ambient temperature	0~45°C
	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: Flammable or corrosive liquids or gases, electrical sources of interference
IP level		Body IP54 , wrist IP67
Advantage features		Compact structure, high speed, high precision, high expansibility and easy operation
Application		Welding
Electric Cabinet Configuration		G4

### INSTALLATION INTERFACE DIAGRAM

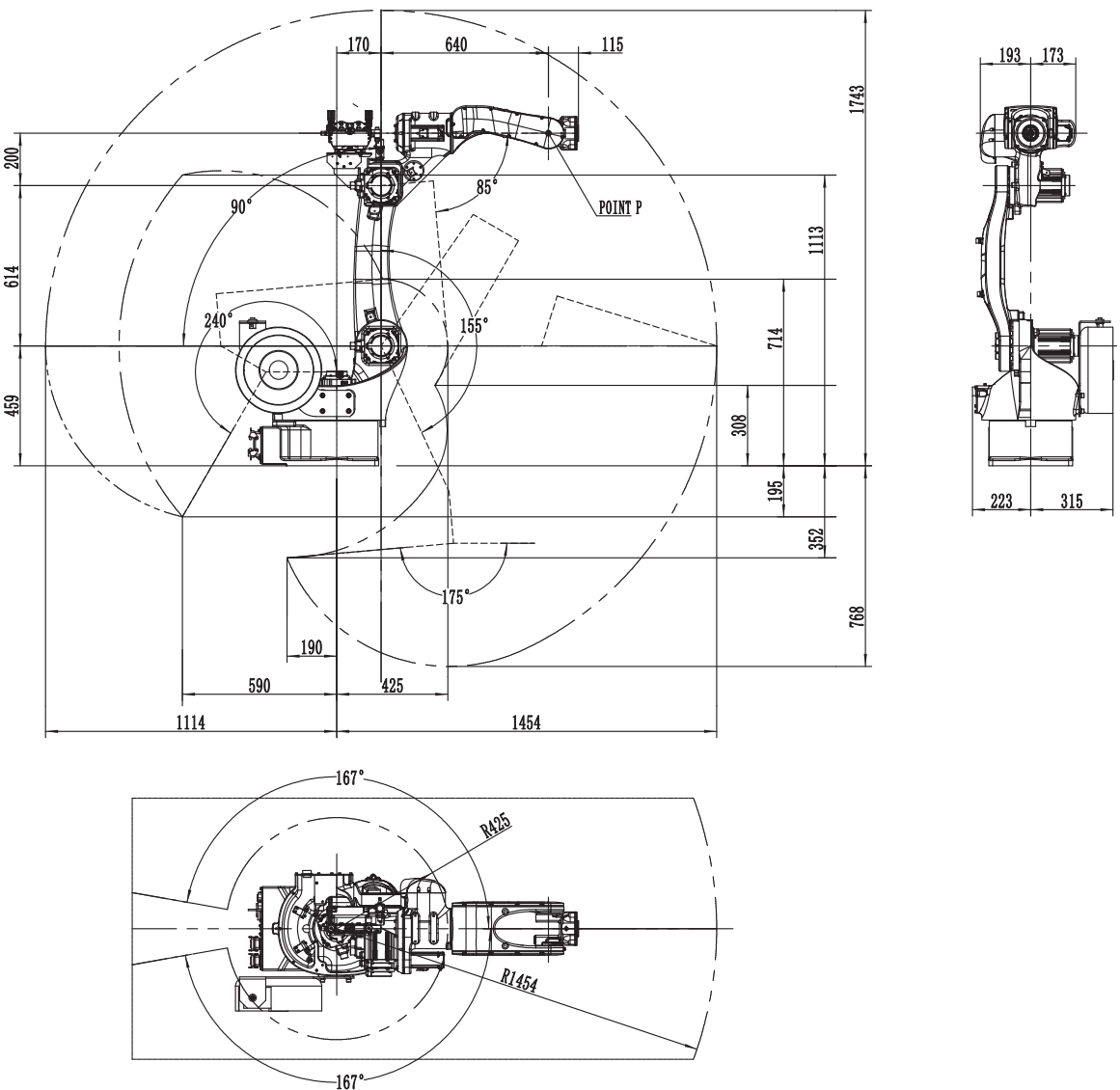


Installation Dimension of Base



Flange Dimensions

### MOTION RANGE DIAGRAM





# CRP-RH18-20-W

## INDUSTRIAL ROBOT WELDING APPLICATION

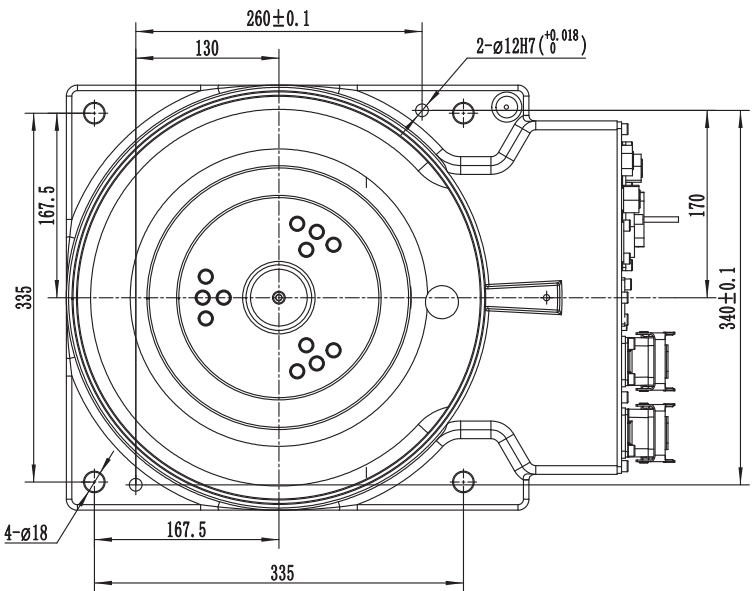


### FUNCTIONAL FEATURES

- The arm span is nearly 1.8 meters. The design is highly compact and can be flexibly installed on the ground or upside down.
- With large working space, fast running speed and high repeated positioning accuracy, it is suitable for wide range of welding applications.
- The safety emergency stop board independent of the control system is equipped with, and the safety relay circuit is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- The robot body adopts highly flexible special cable.
- Built-in three-phase transformer makes 380V and 220V isolated to help the power supply more stable. Built-in three-phase filter can effectively improve the performance of EMC and EMI.
- The robot body is with dual-circuit gas pipe to meet the welding demand.
- The inner diameter of 6-axis middle hole is 44mm, it can meet the installation requirements of water-cooling torch and bellows torch.
- Highly flexible welding cable is built-in.

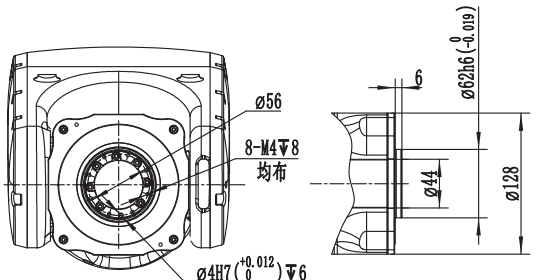
### ROBOT BODY TECHNICAL PARAMETERS

Model	CRP-RH18-20-W	
Arm form	Vertical multiple joints	
Degree of freedom	6 axis	
Maximum payload	20KG	
Repeated positioning accuracy	±0.08mm	
Maximum reaching distance	1730mm	
Robot body weight	285KG	
Installation mode	Ground, upside down mounting, wall mounting	
Maximum travel	axis 1	Ground/upside down mounting -165°~165°, wall mounting -30°~30°
	axis 2	-155°~105°
	axis 3	-170°~240°
	axis 4	-190°~190°
	axis 5	-90°~110°
	axis 6	-210°~210°
Maximum speed	axis 1	160°/S
	axis 2	160°/S
	axis 3	169°/S
	axis 4	301°/S
	axis 5	342°/S
	axis 6	708°/S
Allowable torque	axis 4	55N.m
	axis 5	55N.m
	axis 6	24N.m
Allowable moment of inertia	axis 4	2.1kg.m <sup>2</sup>
	axis 5	2.1kg.m <sup>2</sup>
	axis 6	0.9kg.m <sup>2</sup>
Installation environment	ambient temperature	0~45°C
	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: Flammable or corrosive liquids or gases, electrical sources of interference
IP level	Body IP54 , wrist IP67	
Advantage features	Compact structure, high speed, high precision, high expansibility and easy operation	
Application	Welding	
Electric Cabinet Configuration	G4	



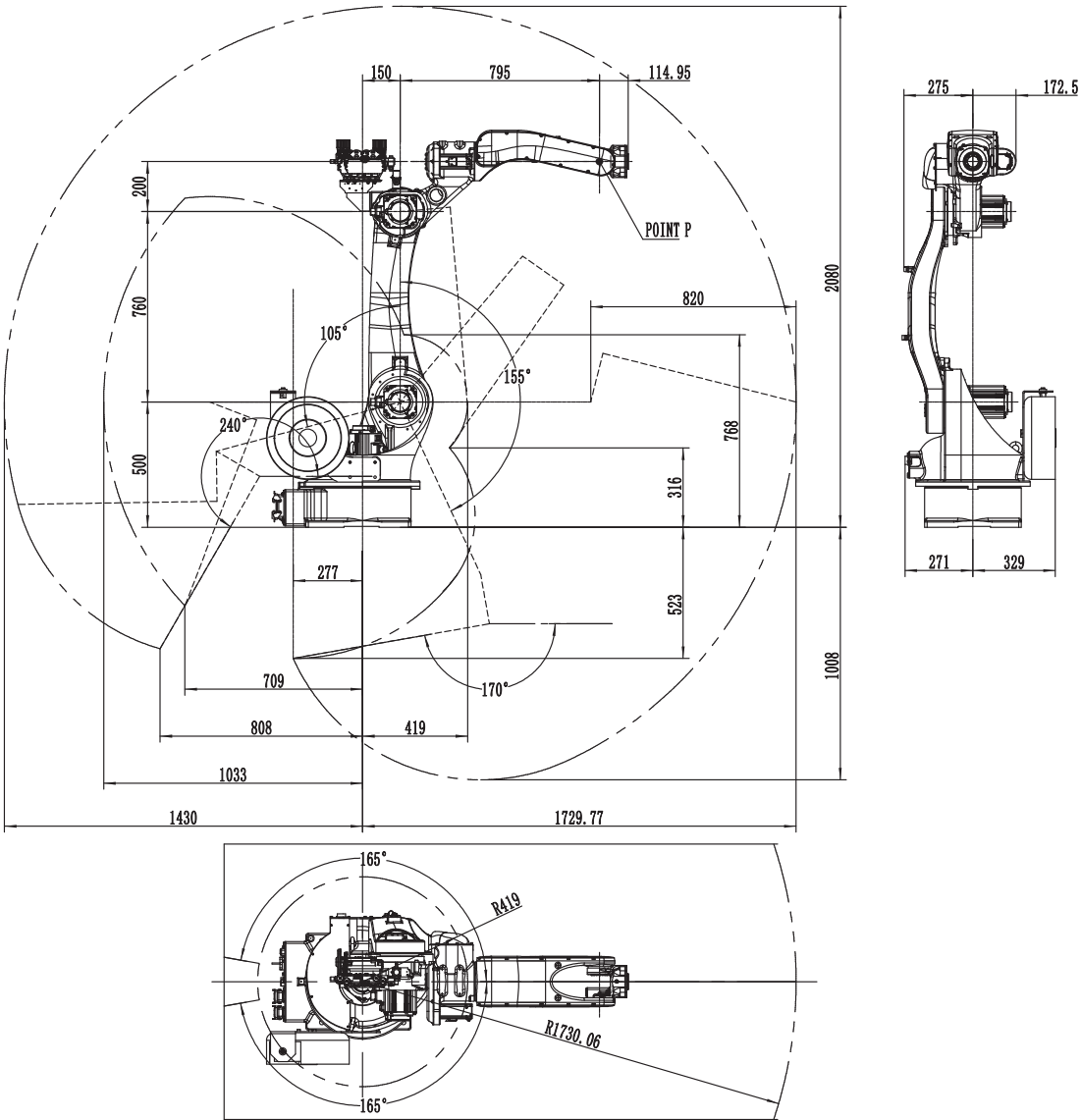
Installation Dimension of Base

### INSTALLATION INTERFACE DIAGRAM



Flange Dimensions

### MOTION RANGE DIAGRAM



# CRP-RH20-06-W

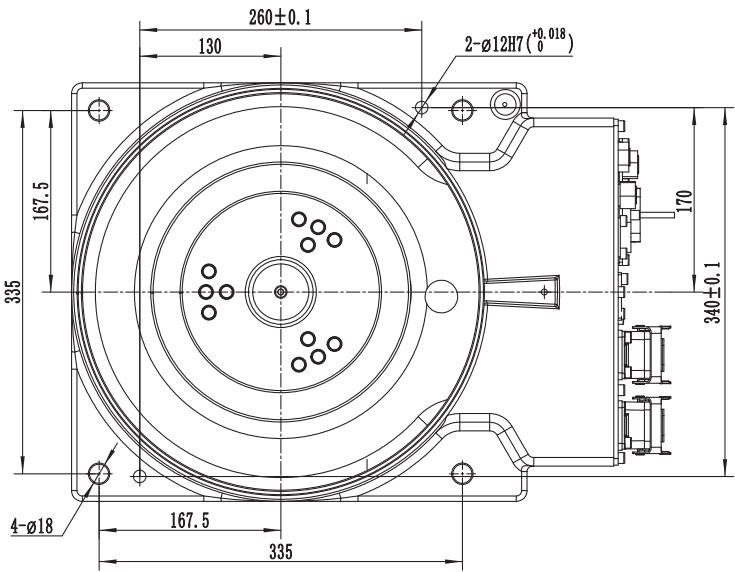
## INDUSTRIAL ROBOT WELDING APPLICATION

### FUNCTIONAL FEATURES

- The arm span is nearly 2.0 meters. The design is highly compact and can be flexibly installed on the ground or upside down.
- With large working space, fast running speed and high repeated positioning accuracy, it is suitable for wide range of welding applications.
- The safety emergency stop board independent of the control system is equipped with, and the safety relay circuit is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- The robot body adopts highly flexible special cable.
- Built-in three-phase transformer makes 380V and 220V isolated to help the power supply more stable. Built-in three-phase filter can effectively improve the performance of EMC and EMI.
- The robot body is with dual-circuit gas pipe to meet the welding demand.
- The inner diameter of 6-axis middle hole is 44mm, it can meet the installation requirements of water-cooling torch and bellows torch.
- Highly flexible welding cable is built-in.

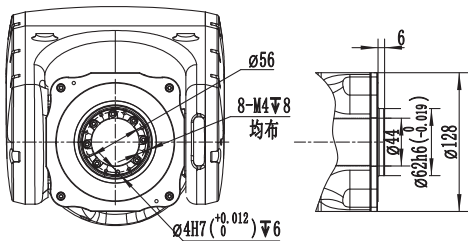
### ROBOT BODY TECHNICAL PARAMETERS

Model		CRP-RH20-06-W
Arm form		Vertical multiple joints
Degree of freedom		6 axis
Maximum payload		6KG
Repeated positioning accuracy		±0.08mm
Maximum reaching distance		2012mm
Robot body weight		291KG
Installation mode		Ground, upside down mounting, wall mounting
Maximum travel	axis 1	Ground/upside down mounting -165°~165°, wall mounting -30°~30°
	axis 2	-155°~100°
	axis 3	-165°~245°
	axis 4	-190°~190°
	axis 5	-105°~110°
	axis 6	-210°~210°
Maximum speed	axis 1	160°/S
	axis 2	160°/S
	axis 3	169°/S
	axis 4	301°/S
	axis 5	338°/S
	axis 6	535°/S
Allowable torque	axis 4	16N.m
	axis 5	16N.m
	axis 6	13N.m
Allowable moment of inertia	axis 4	0.55kg.m <sup>2</sup>
	axis 5	0.55kg.m <sup>2</sup>
	axis 6	0.2kg.m <sup>2</sup>
Installation environment	ambient temperature	0~45°C
	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: Flammable or corrosive liquids or gases, electrical sources of interference
IP level		Body IP54 , wrist IP67
Advantage features		Compact structure, high speed, high precision, high expansibility and easy operation
Application		Welding
Electric Cabinet Configuration		G4



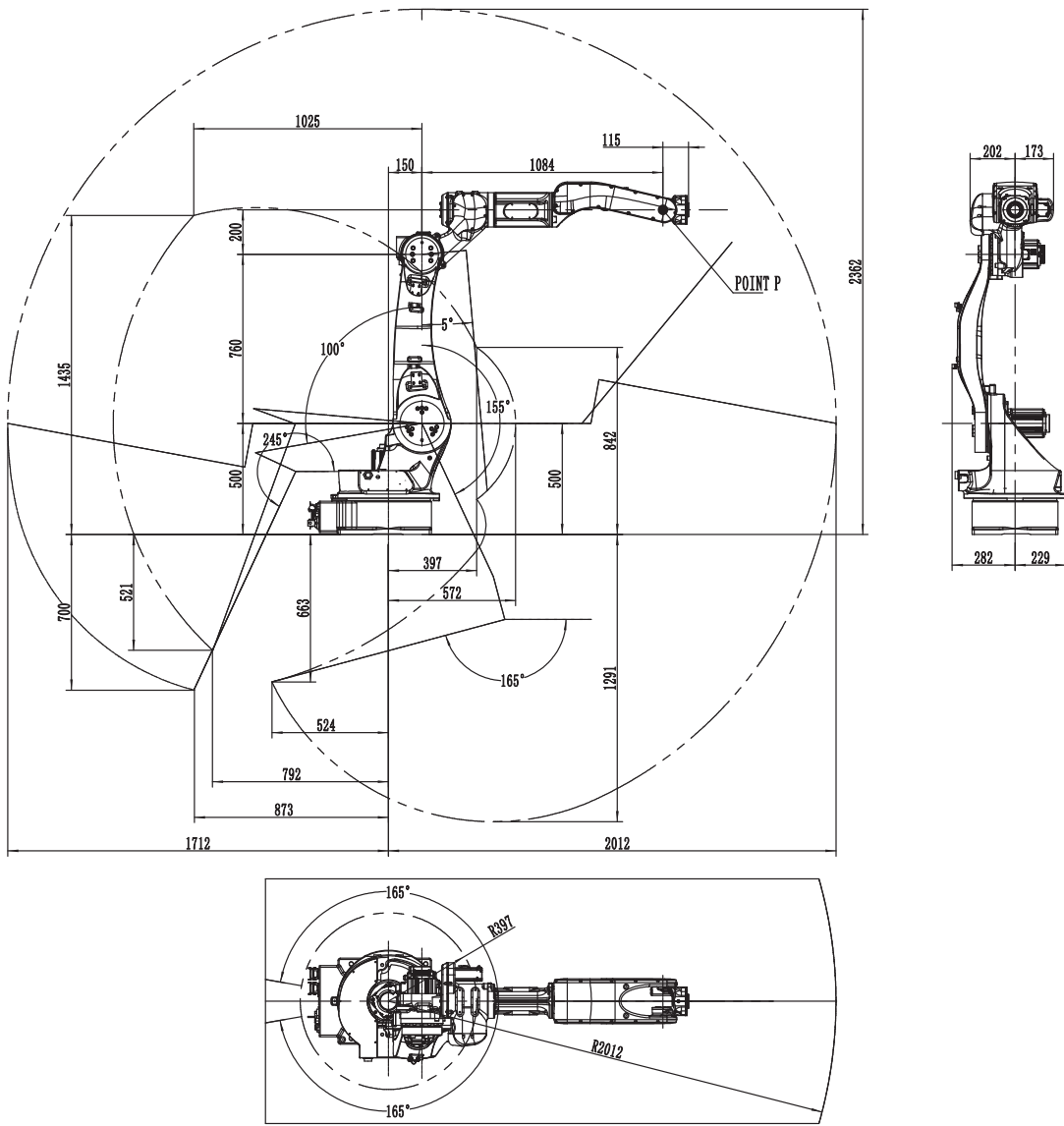
Installation Dimension of Base

### INSTALLATION INTERFACE DIAGRAM



Flange Dimensions

### MOTION RANGE DIAGRAM





# CRP-RH14-10

## INDUSTRIAL ROBOT HANDLING APPLICATION

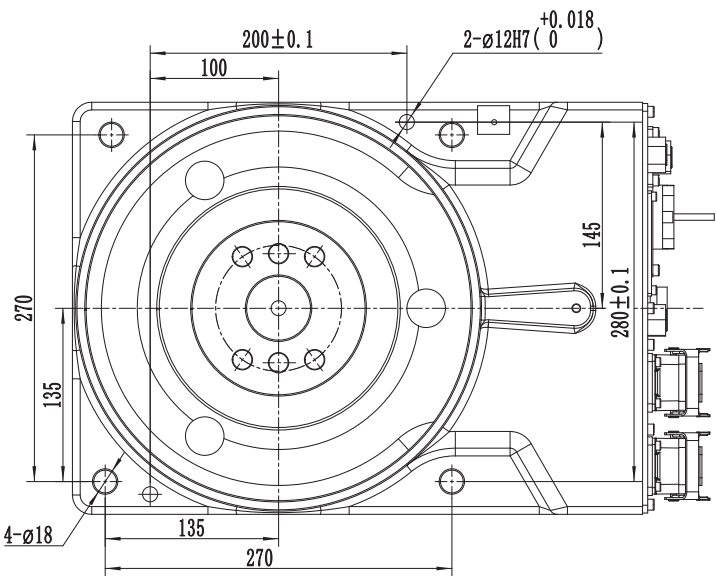


### FUNCTIONAL FEATURES

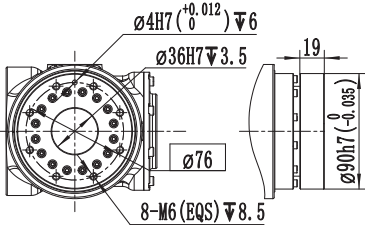
- The safety emergency stop board independent of the control system is equipped with, and imported forced disconnection relay is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- Built-in three-phase transformer makes 380V and 220V isolated to help the power supply more stable. Built-in three-phase filter can effectively isolate external interference and prevent internal interference output.
- The robot body adopts highly flexible special cable.
- The robot body is with dual-circuit gas pipe to meet the handling demand.
- For handling applications, the robot body structure has been optimized and the rigidity is stronger.

### ROBOT BODY TECHNICAL PARAMETERS

Model	CRP-RH14-10	
Arm form	Vertical multiple joints	
Degree of freedom	6 axis	
Maximum payload	10KG	
Repeated positioning accuracy	±0.08mm	
Maximum reaching distance	1454mm	
Robot body weight	170KG	
Installation mode	Ground, upside down mounting, wall mounting	
Maximum travel	axis 1	Ground/upside down mounting -167°~167°, wall mounting -30°~30°
	axis 2	-45°~175°
	axis 3	-80°~155°
	axis 4	-190°~190°
	axis 5	-125°~125°
	axis 6	-360°~360°
Maximum speed	axis 1	169°/S
	axis 2	169°/S
	axis 3	169°/S
	axis 4	301°/S
	axis 5	222°/S
	axis 6	516°/S
Allowable torque	axis 4	20N.m
	axis 5	20N.m
	axis 6	20N.m
Allowable moment of inertia	axis 4	0.63kg.m²
	axis 5	0.63kg.m²
	axis 6	0.33kg.m²
Installation environment	ambient temperature	0~45°C
	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: Flammable or corrosive liquids or gases, electrical sources of interference
IP level	Body IP54 , wrist IP67	
Advantage features	Compact structure, high speed, high precision, high expansibility and easy operation	
Application	cutting, assembly, handling, marking, grinding	
Electric Cabinet Configuration	G4/G5+External Transformer	

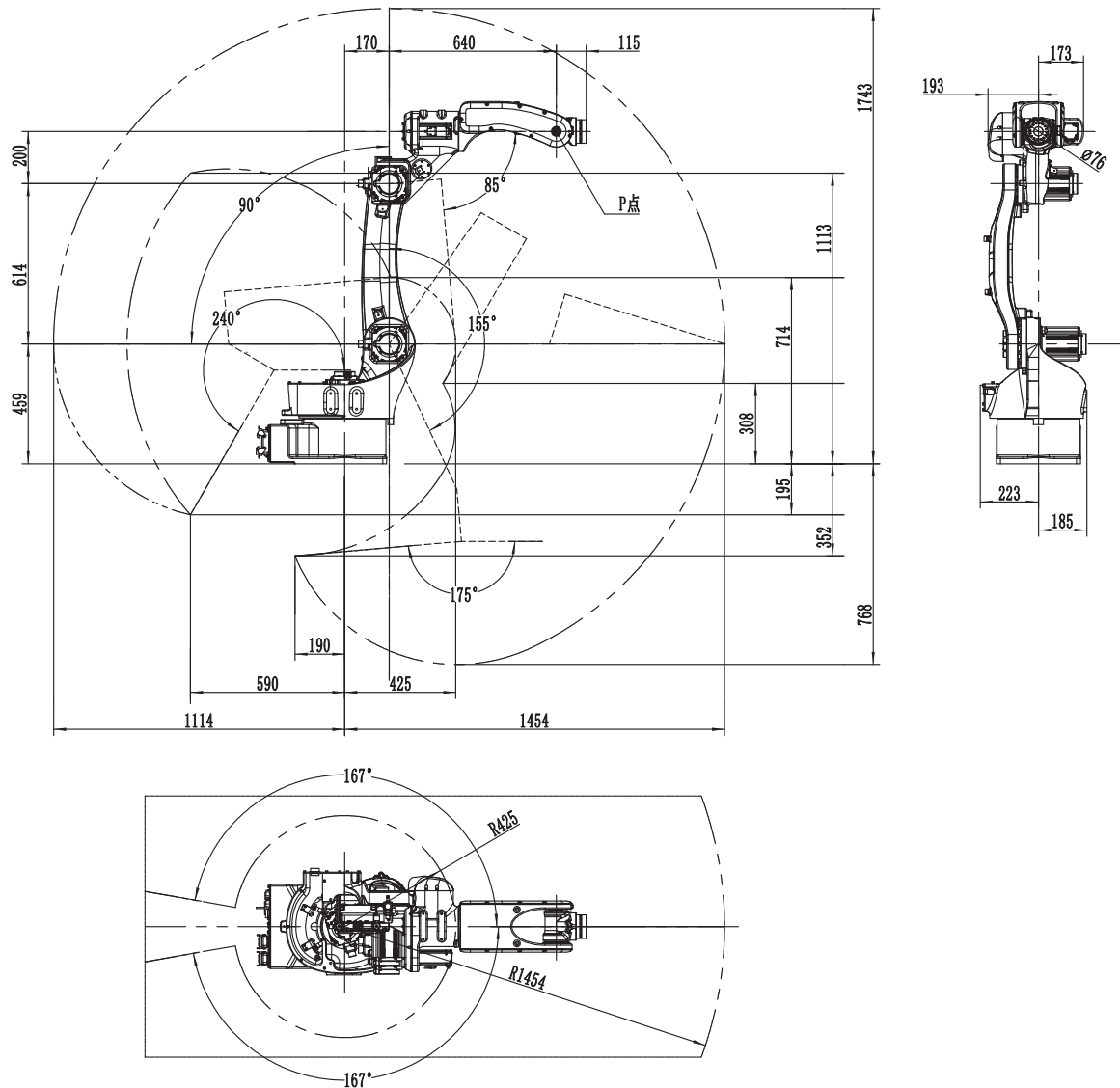


Installation Dimension of Base



Flange Dimensions

### MOTION RANGE DIAGRAM



CRP-RH18-20 (Harmonic)

INDUSTRIAL ROBOT

HANDLING

APPLICATION

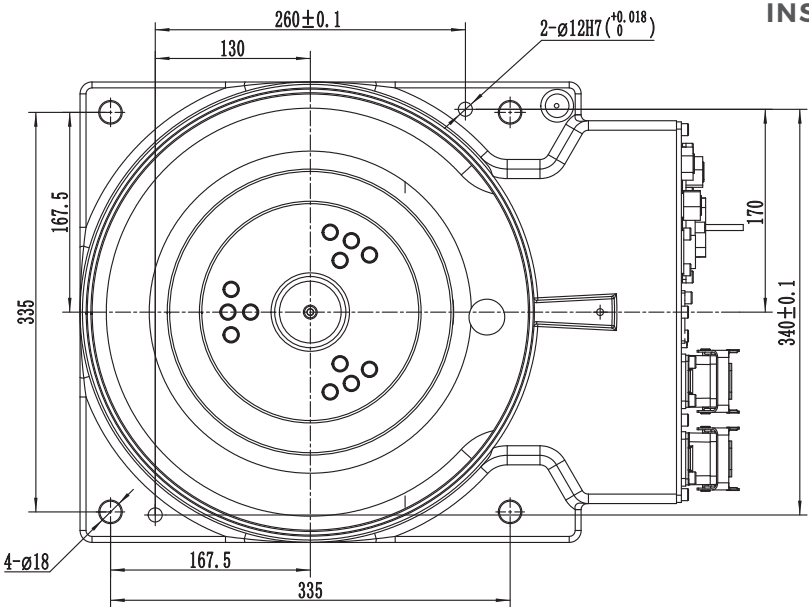


FUNCTIONAL FEATURES

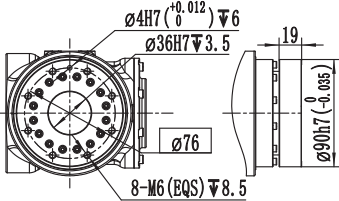
- With compact design 20kg payload and about 1.8 meters arm span, it can be installed on the ground or upside down flexibly.
- With large working space and fast running speed, it is suitable for welding, spraying, loading and unloading, handling, sorting, assembling and other applications.
- The safety emergency stop board is independent of the controller, and the safety relay circuit is adopted to provide double circuit emergency stop to ensure the reliability of emergency stop.
- The robot body cables are made of special cables for highly flexible robots.
- Built-in three-phase transformer, 380V and 200V isolation, more stable power supply.
- Power supply requirements can be customized for different countries. Built-in three-phase filter can effectively improve the performance of EMC and EMI.
- The robot body is with dual-circuit gas pipe and meets welding and handling requirements.

ROBOT BODY TECHNICAL PARAMETERS

Model	CRP-RH18-20	
Arm form	Vertical multiple joints	
Degree of freedom	6 axis	
Maximum payload	20KG	
Repeated positioning accuracy	±0.08mm	
Maximum reaching distance	1730mm	
Robot body weight	285KG	
Installation mode	Ground, upside down mounting, wall mounting	
Maximum travel	axis 1	Ground/upside down mounting -167°~167°, wall mounting -30°~30°
	axis 2	-45°~175°
	axis 3	-80°~155°
	axis 4	-190°~190°
	axis 5	-125°~125°
	axis 6	-360°~360°
Maximum speed	axis 1	160°/S
	axis 2	160°/S
	axis 3	169°/S
	axis 4	301°/S
	axis 5	342°/S
	axis 6	520°/S
Allowable torque	axis 4	55N.m
	axis 5	55N.m
	axis 6	30N.m
Allowable moment of inertia	axis 4	2.2kg.m²
	axis 5	2.2kg.m²
	axis 6	1.2kg.m²
Installation environment	ambient temperature	0~45°C
	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: Flammable or corrosive liquids or gases, electrical sources of interference
IP level	Body IP54 , wrist IP67	
Advantage features	Compact structure, high speed, high precision, high expansibility and easy operation	
Application	cutting, assembly, handling, marking, grinding	
Electric Cabinet Configuration	G4/G5+External Transformer	

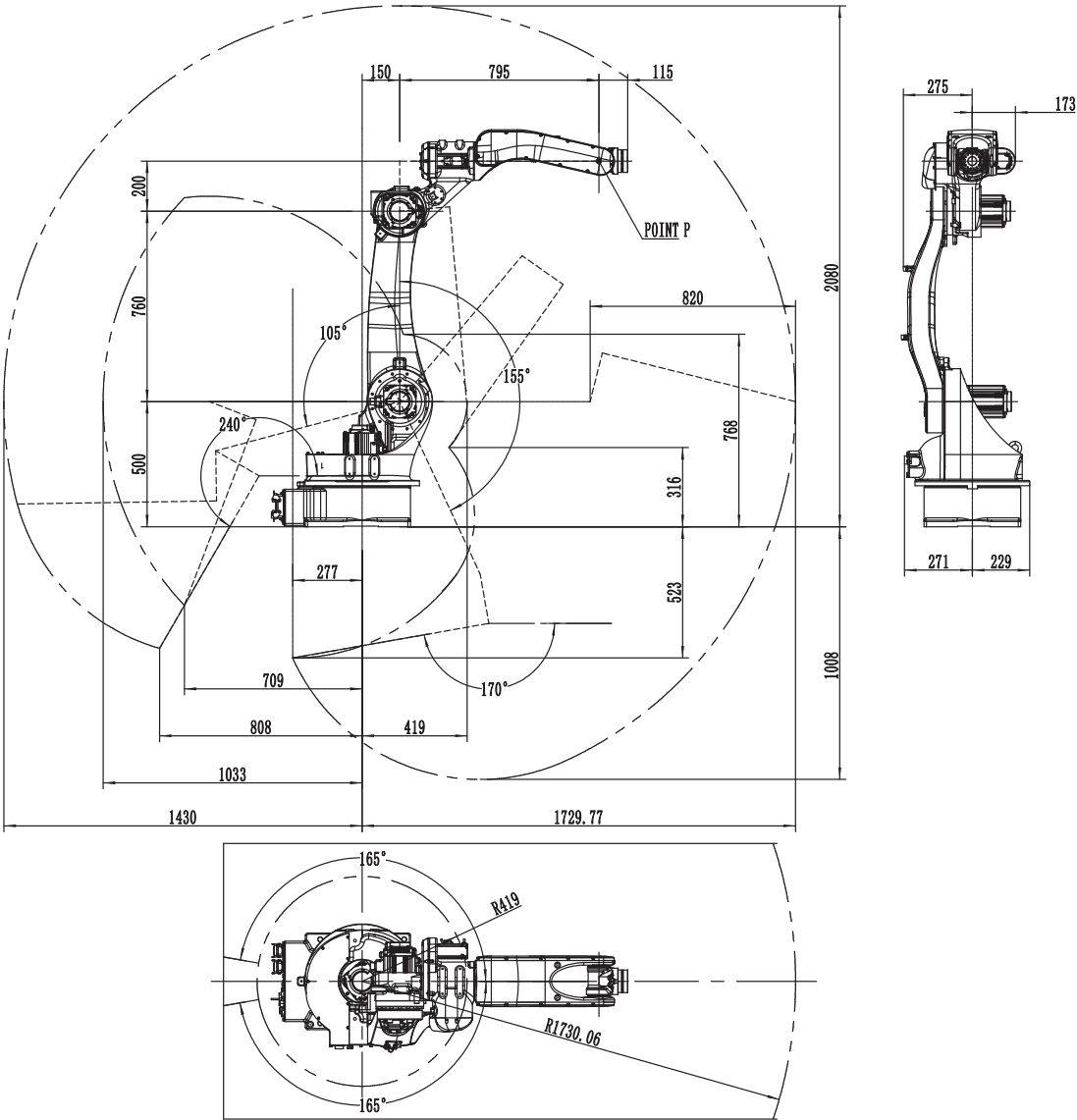


Installation Dimension of Base



Flange Dimensions

MOTION RANGE DIAGRAM





# CRP-RA15-12

# INDUSTRIAL ROBOT HANDLING APPLICATION



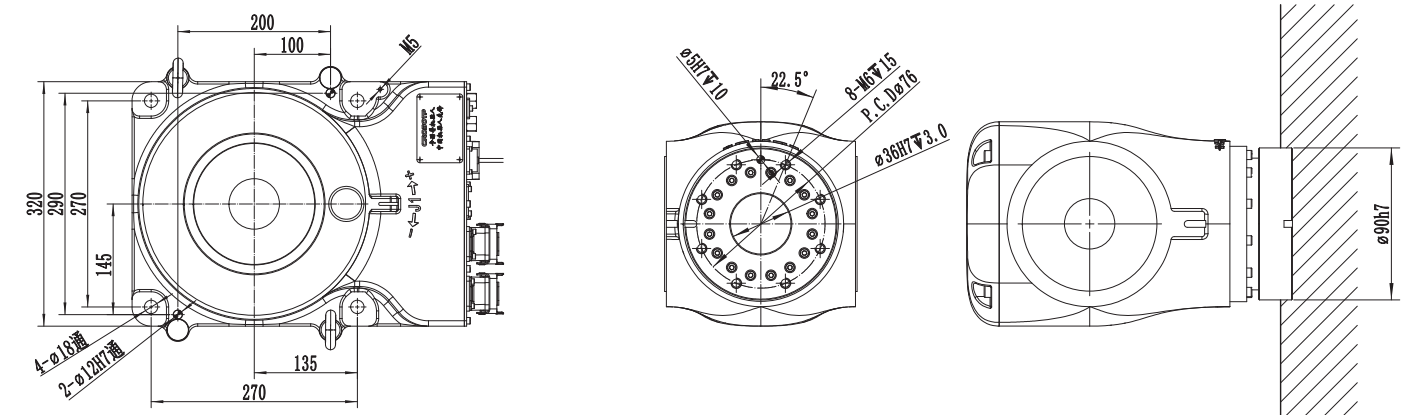
## FUNCTIONAL FEATURES

- The design of the robot is highly compact, which is more lightweight, especially the wrist is slender, or it can be applied in more scenarios.
- Adopt high speed motor, the robot has high rigidity and faster beat.
- Adopt leak-proof structure, the protection class of robot is up to IP 67 to adapt harsher working environment.
- The robot in the axes of J2 J3 J4 is reserved installation holes to install fixed solenoid valve and other accessories. There are IO port and dual-circuit gas pipe at J3 axis to meet the handling application.
- Driving adopted new advanced PID control technology to achieve faster response: With the functions of observer dynamic compensation and weak magnetism, the electric machine can be better controllable and more stable with higher speed.
- The new control algorithm combines Kinematics with Dynamics. The new design integrates driven algorithm and control algorithm to realize automatic programming and guarantee the service life of mechanical under the maximum working capacity based on the characteristics of mechanical components load and condition of loading. Meanwhile, the robot can realize high speed response, faster running speed and work beats with longer life span.
- With collision detection function, it can better protect the robot body and peripheral equipment; With the function of gravity compensation, the robot has higher precision, so it can be applied in more scenarios.
- Equipped with safety emergency stop board which is independent of the control system, and the safety relay circuit is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- Built-in three-phase transformer makes 380V and 220V isolated to help the power supply more stable.
- Built-in three-phase filter can effectively improve the performance of internal and external distractions.

## ROBOT BODY TECHNICAL PARAMETERS

Model	CRP-RA15-12	
Arm form	Vertical multiple joints	
Degree of freedom	6 axis	
Maximum payload	12KG	
Repeated positioning accuracy	±0.05mm	
Maximum reaching distance	1510mm	
Robot body weight	160KG	
Installation mode	Ground, upside down mounting, wall mounting	
Maximum travel	axis 1	Ground/upside down mounting -170°~170°, wall mounting -30°~30°
	axis 2	-60°~175°
	axis 3	-90°~150°
	axis 4	-190°~190°
	axis 5	-135°~135°
	axis 6	-360°~360°
Maximum speed	axis 1	235°/S
	axis 2	208°/S
	axis 3	235°/S
	axis 4	376°/S
	axis 5	440°/S
	axis 6	698°/S
Allowable torque	axis 4	23N.m
	axis 5	23N.m
	axis 6	9.3N.m
Allowable moment of inertia	axis 4	0.63kg.m <sup>2</sup>
	axis 5	0.63kg.m <sup>2</sup>
	axis 6	0.17kg.m <sup>2</sup>
Installation environment	ambient temperature	0~45°C
	relative humidity	38~85%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: Flammable or corrosive liquids or gases, electrical sources of interference
IP level	Wrist Ip67, others IP54	
Advantage features	Compact structure, fast running speed, high repeated positioning accuracy, strong versatility and easy to operate	
Application	Loading and unloading, palletizing, welding, dispensing, spraying	
Electric Cabinet Configuration	G4/G5+External Transformer	

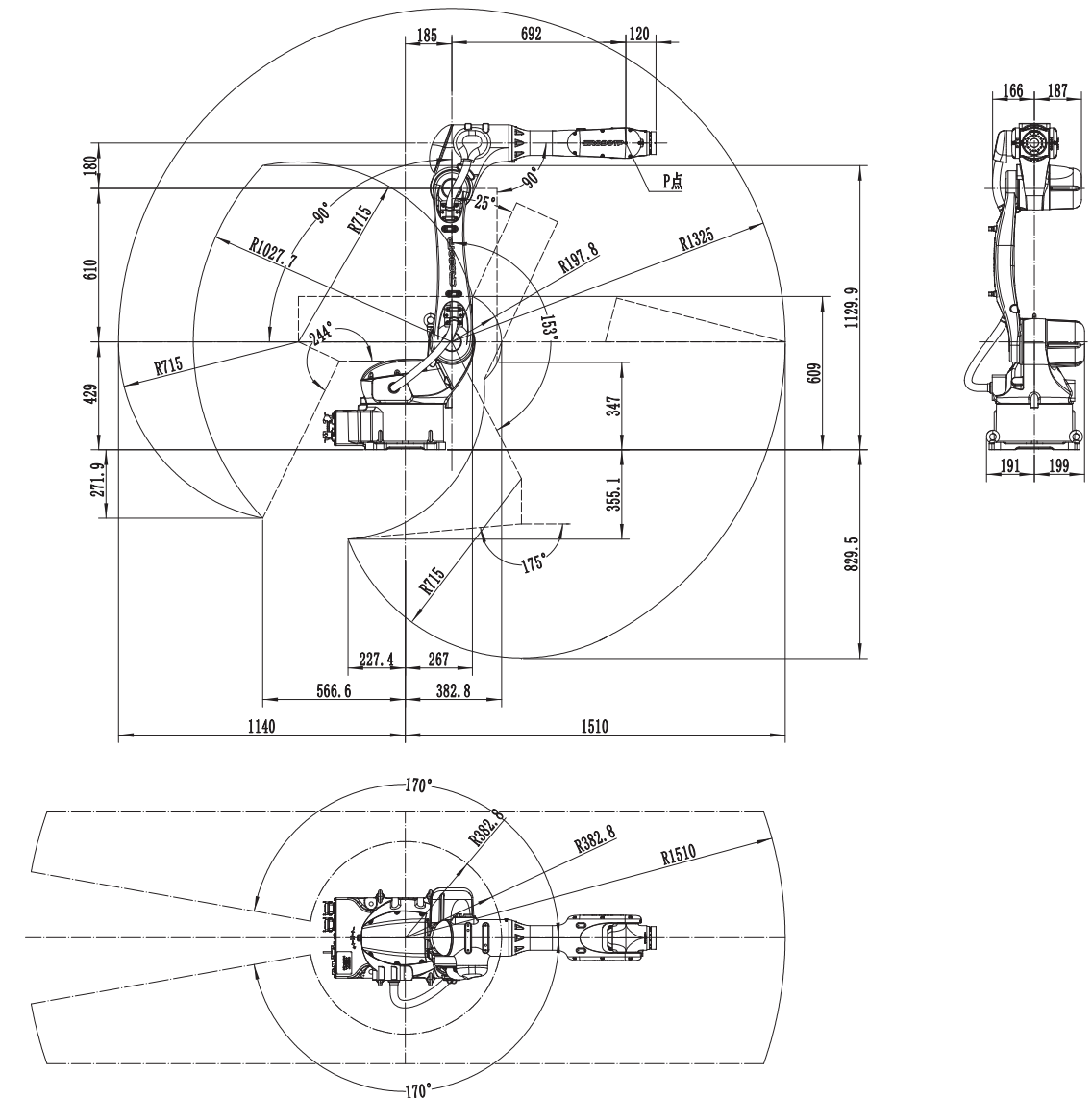
## INSTALLATION INTERFACE DIAGRAM



### Installation Dimension of Base

### Flange Dimensions

### MOTION RANGE DIAGRAM



# CRP-RA18-25

## INDUSTRIAL ROBOT HANDLING APPLICATION



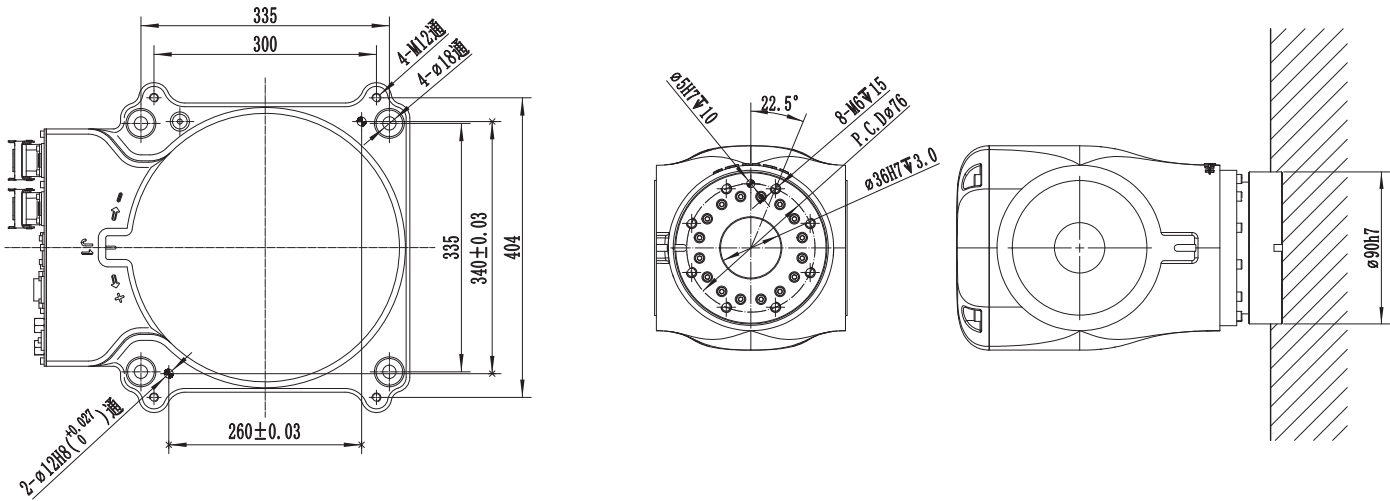
### FUNCTIONAL FEATURES

- The design of the robot is highly compact, which is more lightweight, especially the wrist is slender, so it can be applied in more scenarios.
- Adopt high speed motor, the robot has high rigidity and faster beat.
- Adopt leak-proof structure, the protection class of robot is up to IP 67 to adapt harsher working environment.
- The robot in the axes of J2 J3 J4 is reserved installation holes to install fixed solenoid valve and other accessories. There are IO port and dual-circuit gas pipe at J3 axis to meet the handling application.
- Driving adopts new advanced PID control technology to achieve faster response; With the functions of observer dynamic compensation and weak magnetism, the electric machine can be better controllable and more stable with higher speed.
- The new control algorithm combines Kinematics with Dynamics. The new design integrates driven algorithm and control algorithm to realize automatic programming and guarantee the service life of mechanical under the maximum working capacity based on the characteristics of mechanical components load and condition of loading. Meanwhile, the robot can realize high speed response, faster running speed and work beats with longer life span.
- With collision detection function, it can better protect the robot body and peripheral equipment; With the function of gravity compensation, the robot has higher precision, so it can be applied in more scenarios.
- Equipped with safety emergency stop board which is independent of the control system, and the safety relay circuit is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- Built-in three-phase transformer makes 380V and 220V isolated to help the power supply more stable. Built-in three-phase filter can effectively improve the performance of internal and external distractions.

### ROBOT BODY TECHNICAL PARAMETERS

Model	CRP-RA18-25	
Arm form	Vertical multiple joints	
Degree of freedom	6 axis	
Maximum payload	25KG	
Repeated positioning accuracy	±0.05mm	
Maximum reaching distance	1835.6mm	
Robot body weight	250KG	
Installation mode	Ground, upside down mounting, wall mounting	
Maximum travel	axis 1	Ground/upside down mounting -170°~170°, wall mounting -30°~30°
	axis 2	-60°~175°
	axis 3	-85°~145°
	axis 4	-190°~190°
	axis 5	-130°~130°
	axis 6	-360°~360°
Maximum speed	axis 1	170°/S
	axis 2	170°/S
	axis 3	200°/S
	axis 4	363°/S
	axis 5	350°/S
	axis 6	540°/S
Allowable torque	axis 4	52N.m
	axis 5	52N.m
	axis 6	30N.m
Allowable moment of inertia	axis 4	1.3kg.m <sup>2</sup>
	axis 5	1.3kg.m <sup>2</sup>
	axis 6	0.56kg.m <sup>2</sup>
Installation environment	ambient temperature	0~45°C
	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: Flammable or corrosive liquids or gases, electrical sources of interference
IP level	Wrist Ip67 ,others IP54	
Advantage features	Compact structure, high speed, high precision, high expansibility and easy operation	
Application	Cutting, assembly, handling, marking, polishing	
Electric Cabinet Configuration	G4/G5+External Transformer	

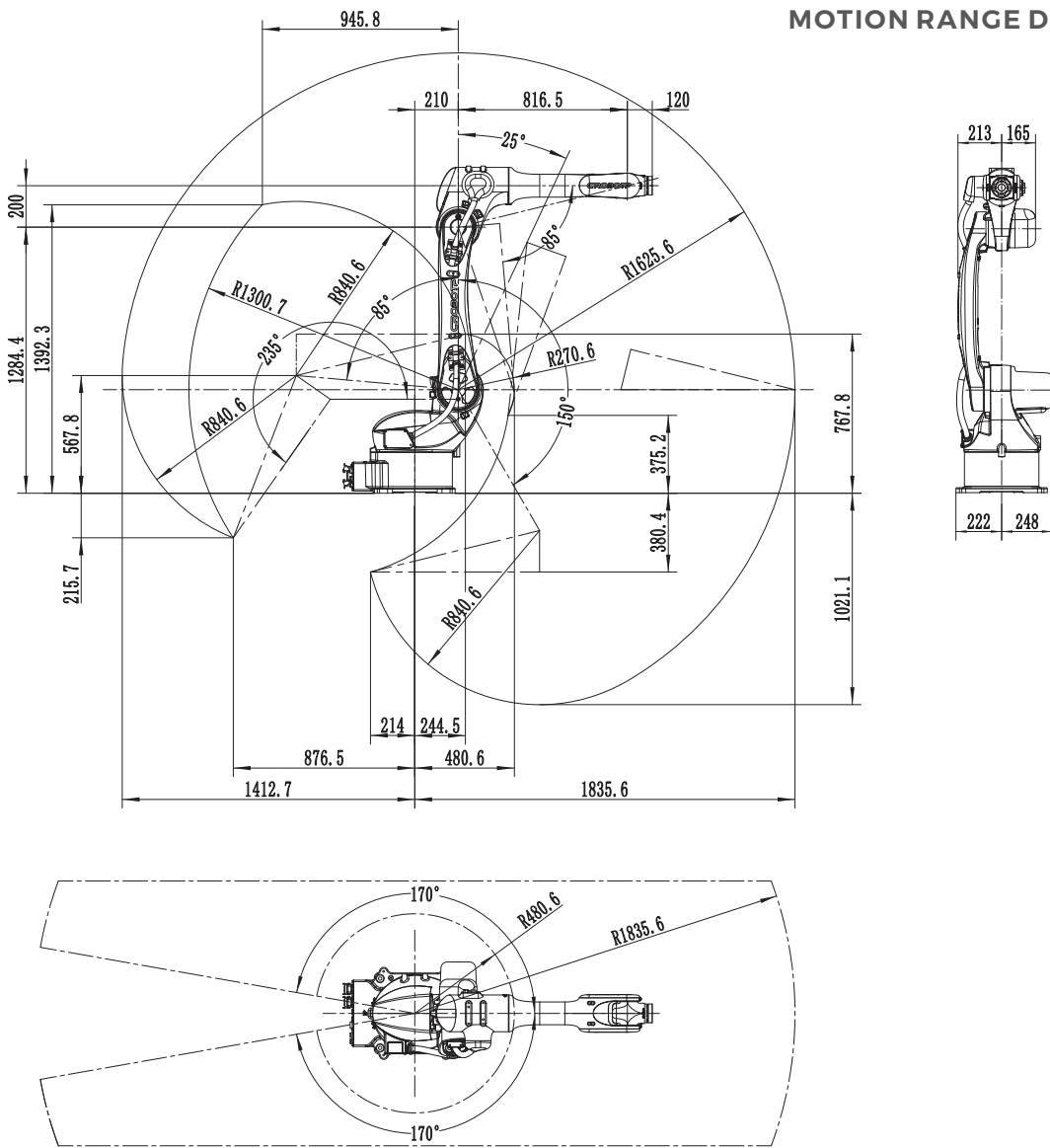
### INSTALLATION INTERFACE DIAGRAM



Installation Dimension of Base

Flange Dimensions

### MOTION RANGE DIAGRAM





# CRP-RA20-12

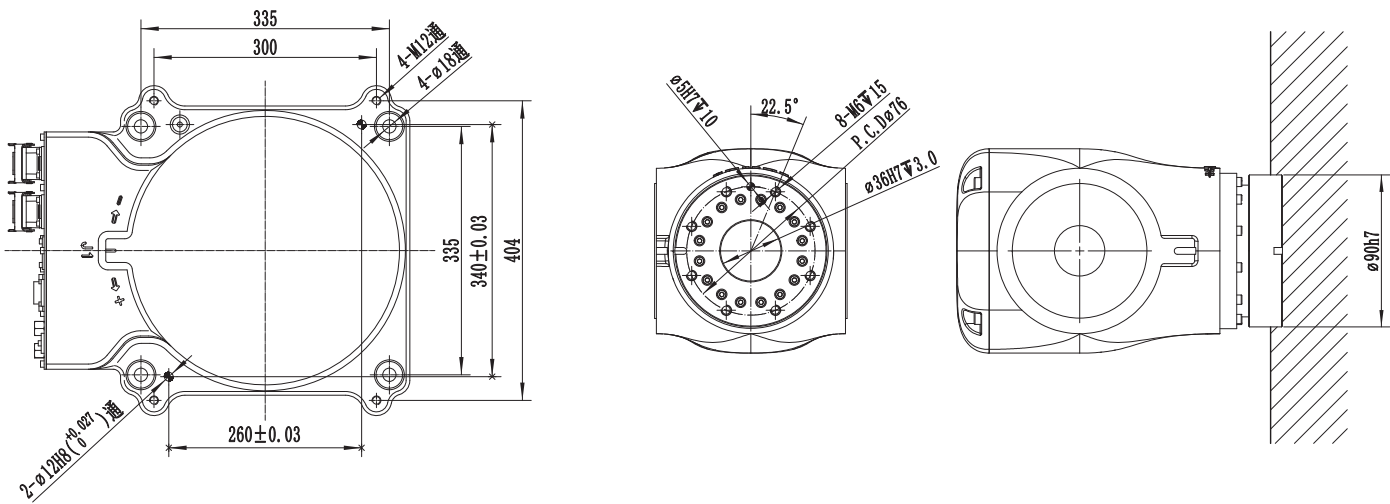
## INDUSTRIAL ROBOT HANDLING APPLICATION

### FUNCTIONAL FEATURES

- The design of the robot is highly compact, which is more lightweight, especially the wrist is slender, so it can be applied in more scenarios.
- Adopt high speed motor, the robot has high rigidity and faster beat.
- Adopt leak-proof structure, the protection class of robot is up to IP 67 to adapt harsher working environment.
- The robot in the axes of J2 J3 J4 is reserved installation holes to install fixed solenoid valve and other accessories. There are IO port and dual-circuit gas pipe at J3 axis to meet the handling application.
- Driving adopts new advanced PID control technology to achieve faster response; With the functions of observer dynamic compensation and weak magnetism, the electric machine can be better controllable and more stable with higher speed.
- The new control algorithm combines Kinematics with Dynamics. The new design integrates driven algorithm and control algorithm to realize automatic programming and guarantee the service life of mechanical under the maximum working capacity based on the characteristics of mechanical components load and condition of loading. Meanwhile, the robot can realize high speed response, faster running speed and work beats with longer life span.
- With collision detection function, it can better protect the robot body and peripheral equipment; With the function of gravity compensation, the robot has higher precision, so it can be applied in more scenarios.
- Equipped with safety emergency stop board which is independent of the control system, and the safety relay circuit is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- Built-in three-phase transformer makes 380V and 220V isolated to help the power supply more stable. Built-in three-phase filter can effectively improve the performance of internal and external distractions.

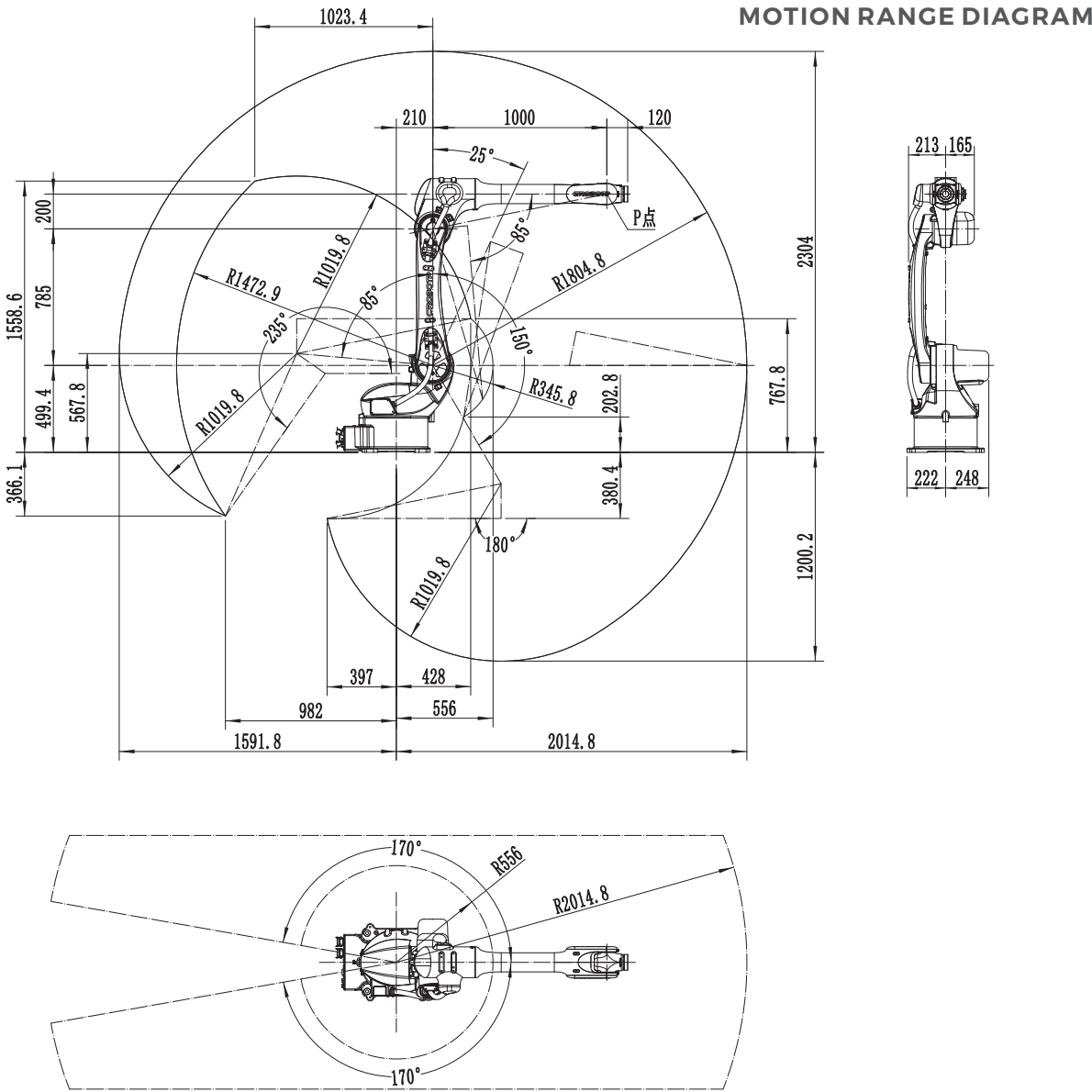
### ROBOT BODY TECHNICAL PARAMETERS

Model		CRP-RA20-12
Arm form		Vertical multiple joints
Degree of freedom		6 axis
Maximum payload		12KG
Repeated positioning accuracy		±0.08mm
Maximum reaching distance		2015mm
Robot body weight		262KG
Installation mode		Ground, upside down mounting, wall mounting
Maximum travel	axis 1	Ground/upside down mounting: -170°~170°, wall mounting: -30°~30°
	axis 2	-50°~170°
	axis 3	-80°~145°
	axis 4	-190°~190°
	axis 5	-135°~135°
	axis 6	-360°~360°
Maximum speed	axis 1	170°/S
	axis 2	170°/S
	axis 3	200°/S
	axis 4	350°/S
	axis 5	350°/S
	axis 6	540°/S
Allowable torque	axis 4	52N.m
	axis 5	52N.m
	axis 6	32N.m
Allowable moment of inertia	axis 4	2.3kg.m²
	axis 5	2.3kg.m²
	axis 6	1.2kg.m²
Noise level		<70dB(A)*
Installation environment	ambient temperature	0~45°C
	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from:Flammable or corrosive liquids or gases,electrical sources of interference
IP level		Wrist Ip67 ,others IP54
Advantage features		Compact structure, high speed, high precision, high expansibility and easy operation
Application		Cutting, assembly, handling, marking, polishing
Electric Cabinet Configuration		G4/G5+External Transformer



Installation Dimension of Base

Flange Dimensions



# CRP-RA22-80

## INDUSTRIAL ROBOT HANDLING APPLICATION



### FUNCTIONAL FEATURES

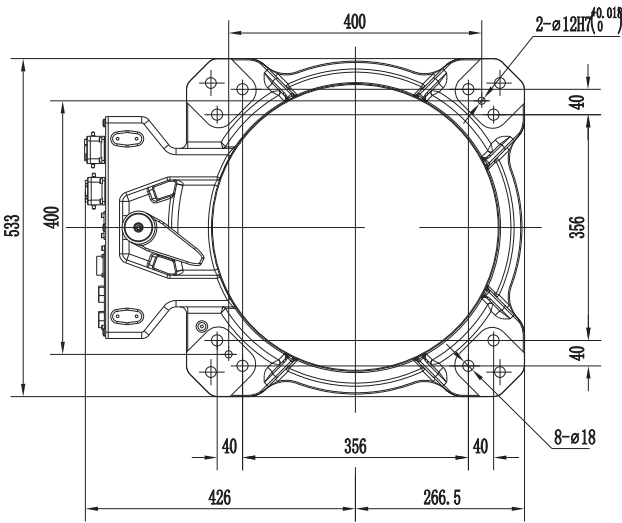
- The arm span is 2.2 meters. It has strong payload capacity, large working space and high flexibility.
- With fast running speed and high repeated positioning accuracy, it has a wide range of applications, such as loading and unloading, handling, sorting, assembly, etc.
- Equipped with safety emergency stop board which is independent of the control system, and the safety relay circuit is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- The robot body adopts highly flexible special cable.
- Built-in three-phase filter can effectively improve the performance of EMC and EMI.
- The robot body is with ID10 dual-circuit gas pipe to meet the handling demand.
- The single cantilever structure is adopted to reduce the terminal weight and improve its flexibility. The selectivity range of manipulators, tools and workpiece shapes is expanded.
- Built-in cables and gas pipe. The hollow part is set at the center of the forearm and wrist. The cables and gas pipe are built in from the base of the robot to the end of the wrist, which is more convenient for users and improves work efficiency.
- High expansibility, multiple user bracket installation platforms are set on the robot body, which is convenient for users to fix cables and related auxiliary tools.

### ROBOT BODY TECHNICAL PARAMETERS

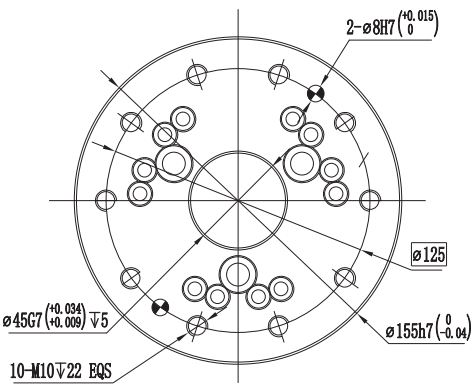
Model	CRP-RA22-80	
Arm form	Vertical multiple joints	
Degree of freedom	6 axis	
Maximum payload	80KG	
Repeated positioning accuracy	±0.08mm	
Maximum reaching distance	2200mm	
Robot body weight	713KG	
Installation mode	Ground	
Noise level	<80dB(A)*	
Maximum travel	axis 1	-175°~175°
	axis 2	-50°~158°
	axis 3	-80°~160°
	axis 4	-170°~170°(with mechanical limits) -360°~360°(without mechanical limits)
	axis 5	-125°~125°
	axis 6	-360°~360°
Maximum speed	axis 1	130°/S
	axis 2	125°/S
	axis 3	124°/S
	axis 4	224°/S
	axis 5	190°/S
	axis 6	285°/S
Allowable torque	axis 4	328N.m
	axis 5	328N.m
	axis 6	198N.m
Allowable moment of inertia	axis 4	35.06kg.m²
	axis 5	35.06kg.m²
	axis 6	15.38kg.m²
Installation environment	ambient temperature	0~45°C
	relative humidity	20~85%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: flammable or corrosive liquids or gases, electrical sources of interference
IP level	Body IP54 , wrist IP67	
Advantage features	Compact structure, high speed, high precision, high expansibility and easy operation	
Application	Cutting, assembly, handling, marking, grinding	
Electric Cabinet Configuration	G7	

\* Measurement conditions:  
(1) the robot is firmly fixed on the flat ground;  
(2) Test at a distance of 3300mm from the rotation center of joint J1; (Noise level varies according to conditions. Background noise has some influence.)

### INSTALLATION INTERFACE DIAGRAM

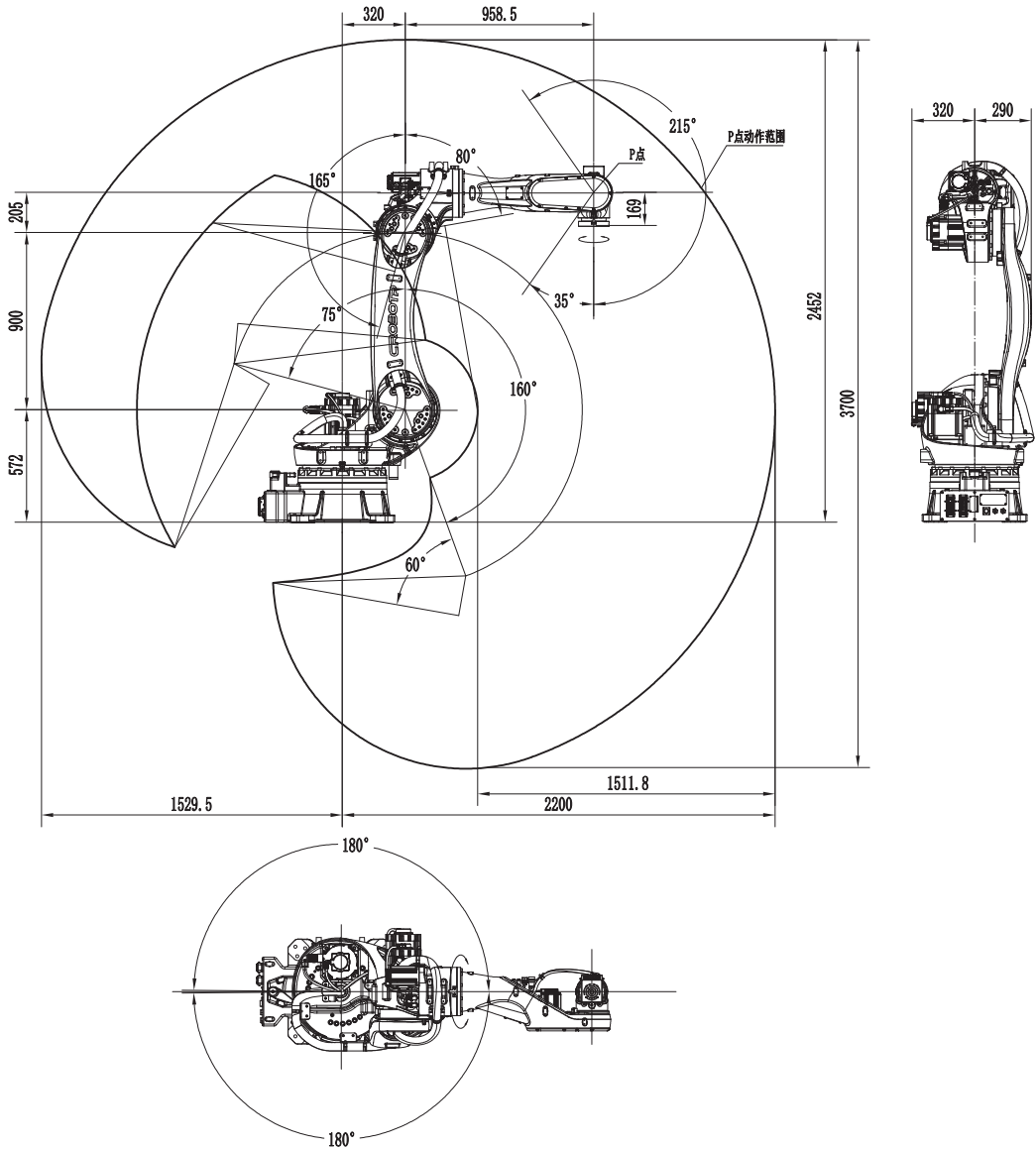


Installation Dimension of Base



Flange Dimensions

### MOTION RANGE DIAGRAM





# CRP-RA27-50

## INDUSTRIAL ROBOT HANDLING APPLICATION



### FUNCTIONAL FEATURES

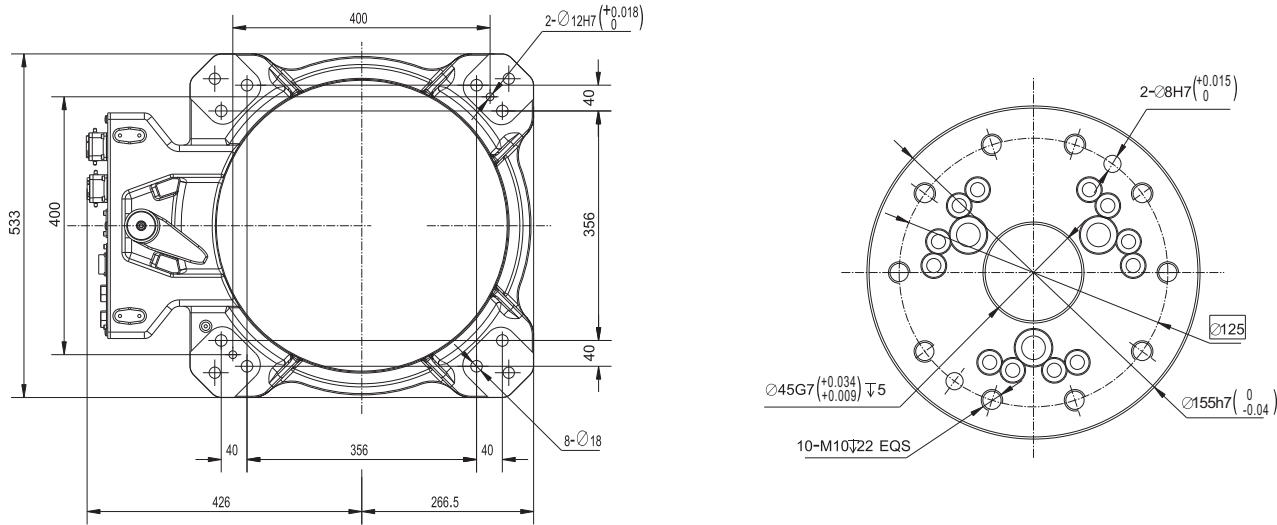
- The arm span is 2.7 meters. It has strong payload capacity, large working space and high flexibility.
- With fast running speed and high repeated positioning accuracy, it has a wide range of applications, such as loading and unloading, handling, sorting, assembly, etc.
- Equipped with safety emergency stop board which is independent of the control system, and the safety relay circuit is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- The robot body adopts highly flexible special cable.
- Built-in three-phase filter can effectively improve the performance of EMC and EMI.
- The robot body is with ID10 dual-circuit gas pipe to meet the handling demand.
- The single cantilever structure is adopted to reduce the terminal weight and improve its flexibility. The selectivity range of manipulators, tools and workpiece shapes is expanded.
- Built-in cables and gas pipe. The hollow part is set at the center of the forearm and wrist. The cables and gas pipe are built in from the base of the robot to the end of the wrist, which is more convenient for users and improves work efficiency.
- High expansibility, multiple user bracket installation platforms are set on the robot body, which is convenient for users to fix cables and related auxiliary tools.

### ROBOT BODY TECHNICAL PARAMETERS

Model	CRP-RA27-50	
Arm form	Vertical multiple joints	
Degree of freedom	6 axis	
Maximum payload	50KG	
Repeated positioning accuracy	±0.08mm	
Maximum reaching distance	2680mm	
Robot body weight	728KG	
Installation mode	Ground	
Noise level	<80dB(A)*	
Maximum travel	axis 1	-175°~175°
	axis 2	-50°~158°
	axis 3	-80°~160°
	axis 4	-170°~170°(with mechanical limits) -360°~360°(without mechanical limits)
	axis 5	-125°~125°
	axis 6	-360°~360°
Maximum speed	axis 1	130°/S
	axis 2	125°/S
	axis 3	124°/S
	axis 4	224°/S
	axis 5	190°/S
	axis 6	285°/S
Allowable torque	axis 4	231N.m
	axis 5	231N.m
	axis 6	135N.m
Allowable moment of inertia	axis 4	27.34kg.m²
	axis 5	27.34kg.m²
	axis 6	12.30kg.m²
Installation environment	ambient temperature	0~45°C
	relative humidity	20~85%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: flammable or corrosive liquids or gases, electrical sources of interference
IP level	Body IP54 , wrist IP67	
Advantage features	Compact structure, high speed, high precision, high expansibility and easy operation	
Application	Cutting, assembly, handling, marking, grinding	
Electric Cabinet Configuration	G7	

\* Measurement conditions:  
(1) the robot is firmly fixed on the flat ground;  
(2) Test at a distance of 3700mm from the rotation center of joint J1; (Noise level varies according to conditions. Background noise has some influence.)

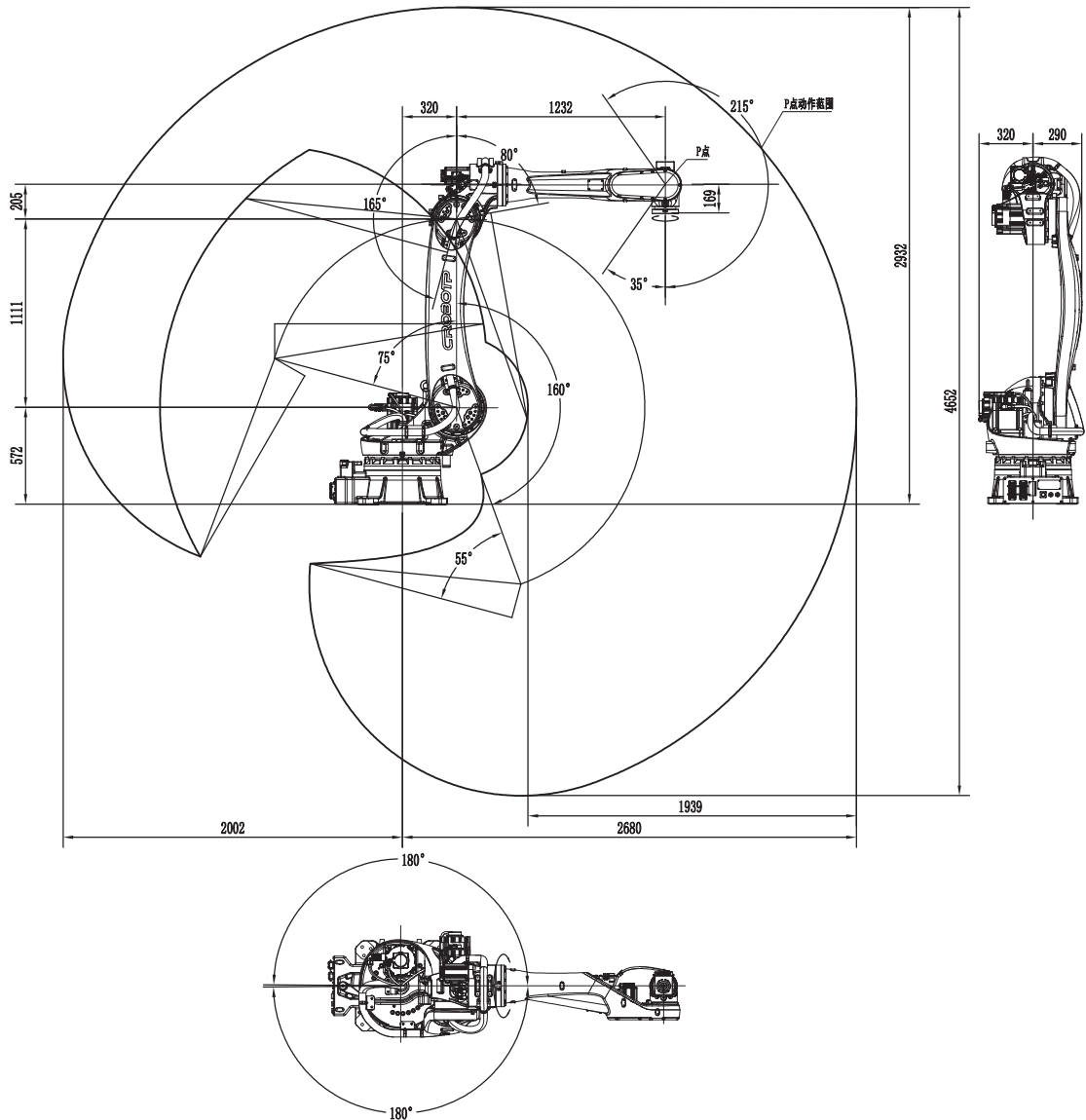
### INSTALLATION INTERFACE DIAGRAM



Installation Dimension of Base

Flange Dimensions

### MOTION RANGE DIAGRAM



# CRP-RP15-15

INDUSTRIAL ROBOT  
HANDLING  
APPLICATION



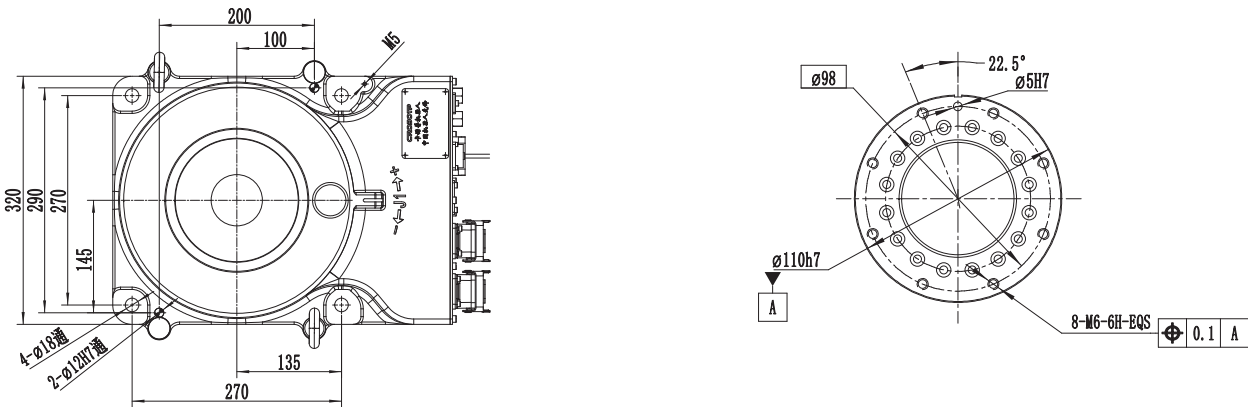
### FUNCTIONAL FEATURES

- With the features of high speed, high precision and high stability, CRP-RP15-15 can be adopted in more application scenarios;
- Rod joint adopts high protection design so it has longer life span. And the robot has better performance in waterproof and dustproof with maintenance-free in usage period;
- Equipped with special punching and palletizing package, customized interface to make operation be more convenient and easy.
- J4 axis adopts higher rigid reducer so the robot has stronger bearing capacity;
- The gravity compensation function ensures the accuracy of the robot at any position;
- Adaptive acceleration can improve the life span of the robot and ensure reasonable acceleration of arbitrary trajectory to achieve more efficient movement

### ROBOT BODY TECHNICAL PARAMETERS

Model		CRP-RP15-15
Arm form		Multi joints+connecting rod
Degree of freedom		4 axis
Maximum payload		15KG
Repeated positioning accuracy		±0.05mm
Maximum reaching distance		1530mm
Robot body weight		155KG
Installation mode		Ground
Maximum travel	axis 1	-165°~165°
	axis 2	0°~135°
	axis 3	105°~195°
	axis 4	-360°~360°
Maximum speed	axis 1	230°/S
	axis 2	230°/S
	axis 3	230°/S
	axis 4	550°/S
Allowable torque	axis 4	1.3kg.m <sup>2</sup>
	ambient temperature	0~45℃
Installation environment	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: flammable or corrosive liquids or gases, electrical sources of interference
IP level		IP56
Advantage features		Compact structure, high speed, high precision, high expansibility and easy operation
Application		Handling, palletizing, depalletizing, stamping, loading and unloading, etc
Electric Cabinet Configuration		G6

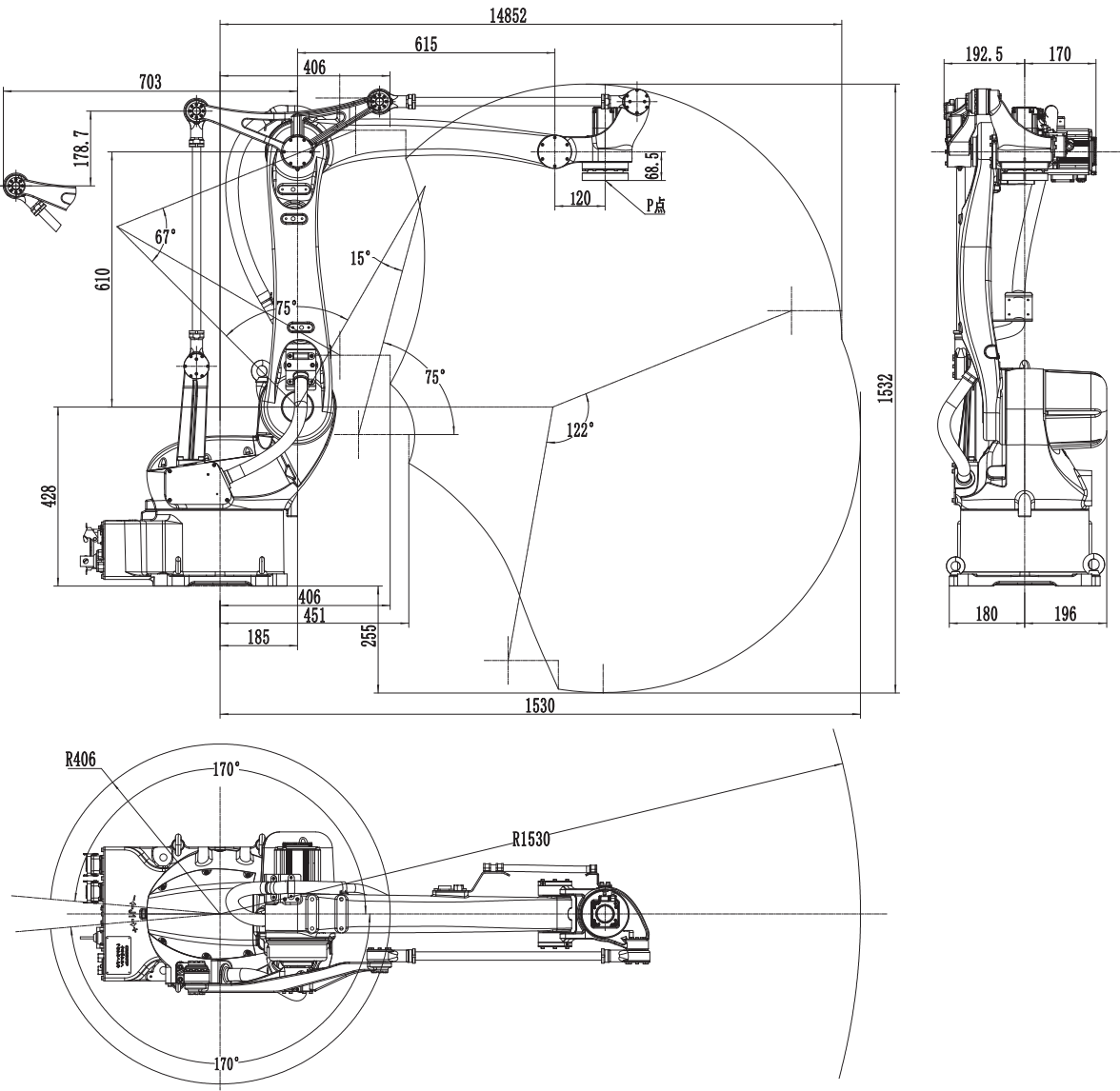
### INSTALLATION INTERFACE DIAGRAM



Installation Dimension of Base

Flange Dimensions

### MOTION RANGE DIAGRAM





# CRP-RP18-25

INDUSTRIAL ROBOT  
HANDLING  
APPLICATION



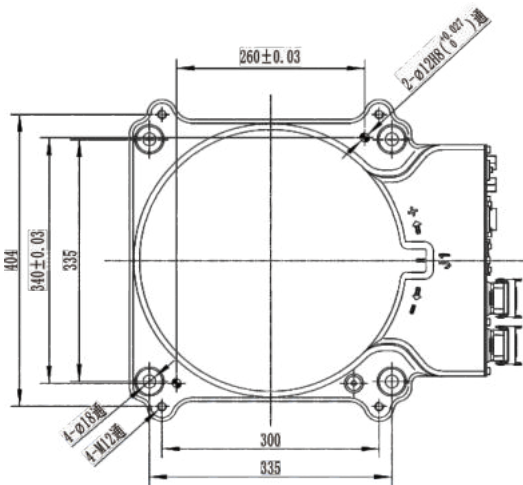
### FUNCTIONAL FEATURES

- Equipped with safety emergency stop board which is independent of the control system, and the safety relay circuit is adopted to provide double-circuit emergency stop to ensure the reliability of emergency stop.
- Built-in three-phase filter can effectively improve the performance of internal and external distractions.
- The robot body adopts highly flexible special cable
- The robot body is with dual-circuit gas pipe to meet the handling demands
- J4 axis adopts harmonic reducer structure and the robot body structure has been optimized to improve rigidity so it can meet different handling applications
- Rod joint adopts high protection design so it has longer life span. And the robot has better performance in waterproof and dustproof

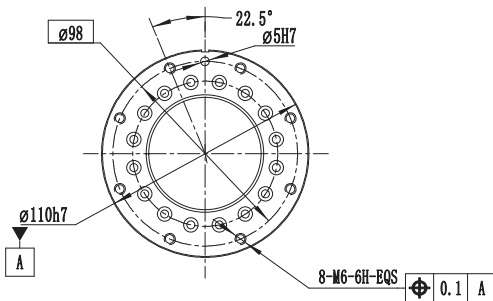
### ROBOT BODY TECHNICAL PARAMETERS

Model		CRP-RP18-25
Arm form		Multi joints+connecting rod
Degree of freedom		4 axis
Maximum payload		25KG
Repeated positioning accuracy		±0.08mm
Maximum reaching distance		1885mm
Robot body weight		155KG
Installation mode		Ground
Maximum travel	axis 1	-170°~170°
	axis 2	0°~130°
	axis 3	105°~195°
	axis 4	-360°~360°
Maximum speed	axis 1	172°/S
	axis 2	172°/S
	axis 3	212°/S
	axis 4	350°/S
Allowable torque	axis 4	1.5kg.m <sup>2</sup>
	ambient temperature	0~45°C
Installation environment	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: flammable or corrosive liquids or gases, electrical sources of interference
IP level		IP56
Advantage features		Compact structure, high speed, high precision, high expansibility and easy operation
Application		Handling, Assembly
Electric Cabinet Configuration		G6+External Transformer

### INSTALLATION INTERFACE DIAGRAM

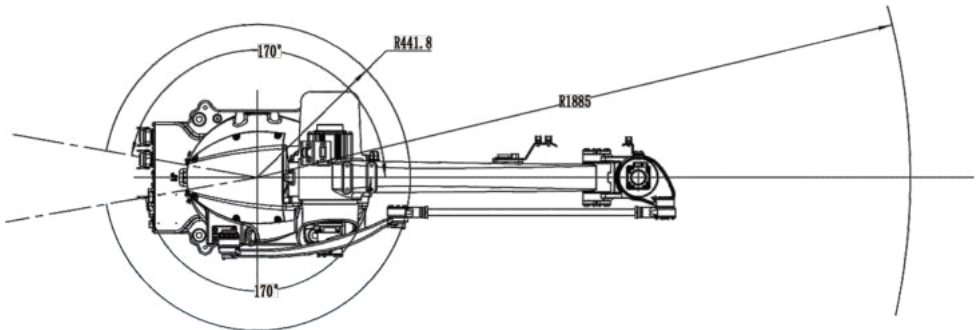
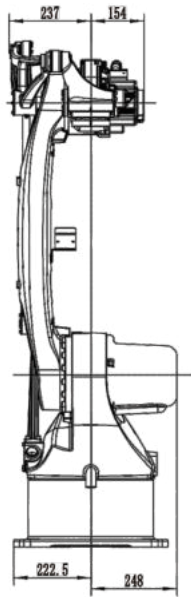
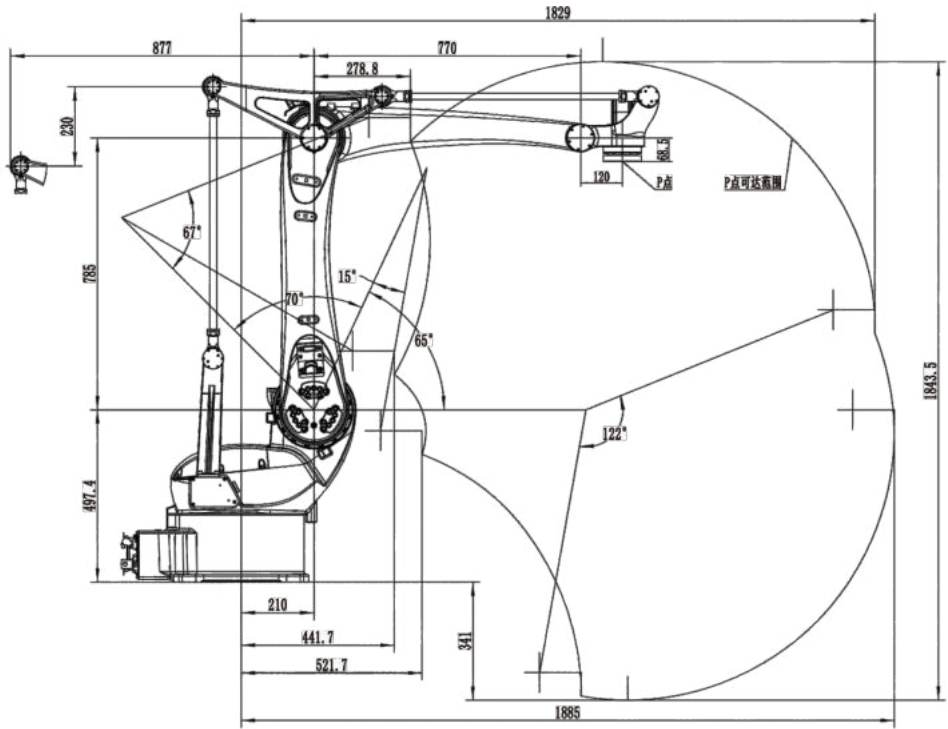


Installation Dimension of Base



Flange Dimensions

### MOTION RANGE DIAGRAM



# CRP-RP24-130

INDUSTRIAL ROBOT  
HANDLING  
APPLICATION



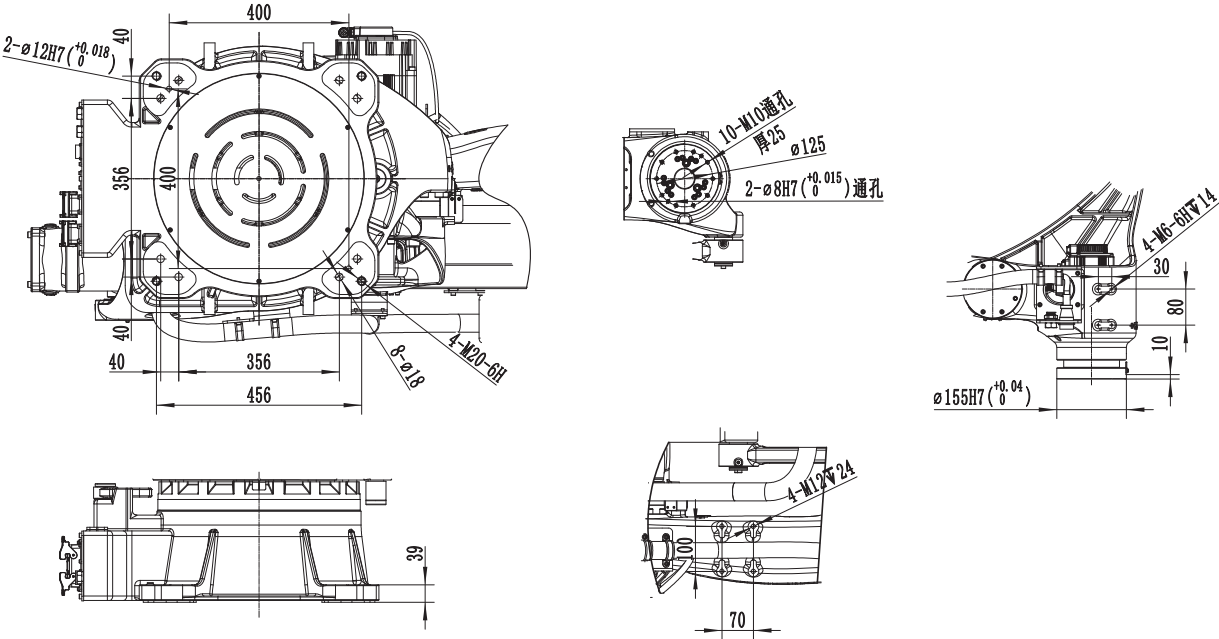
### FUNCTIONAL FEATURES

- With gravity compensation, load adaptive, and S-T functions, the robot has higher precision, smaller impact, shorter cycle time under typical working condition ;
- With parallel spring cylinder, smaller floor area, lower power consumption, smoother control;
- Two-way large-aperture air pipe to meet the requirements of large-load vacuum suction cups.
- Armspan (Maximum reaching distance) :2400 mm
- Load:130 Kg

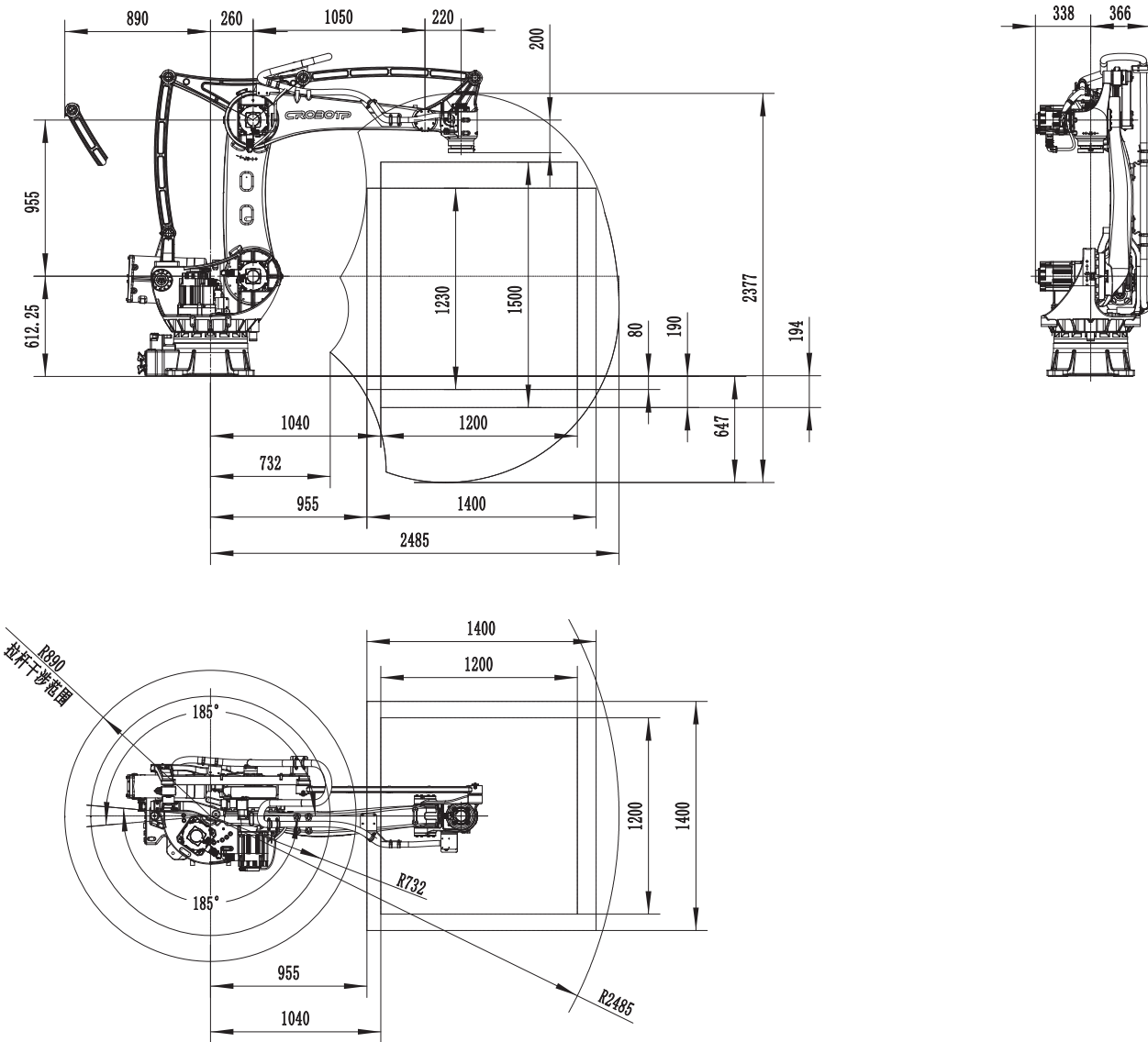
### ROBOT BODY TECHNICAL PARAMETERS

Model		CRP-RP24-130
Arm form		Multi-joint + connecting rod
Degree of freedom		4 axis
Maximum payload		130KG
Repeated positioning accuracy		±0.2mm
Maximum reaching distance		2485mm
Robot body weight		820KG
Installation mode		Ground, bracket
Maximum travel	axis 1	-175°~175°
	axis 2	3°~129°
	axis 3	85°~210°
	axis 4	-360°~360°
Maximum speed	axis 1	154°/S
	axis 2	166°/S
	axis 3	104°/S
	axis 4	271°/S
Allowable torque		axis 4 125N.m
Allowable moment of inertia		axis 4 13kg.m²
Installation environment	ambient temperature	0~45°C
	relative humidity	20~80%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: flammable or corrosive liquids or gases, electrical sources of interference
IP level		IP54
Features		Compact structure and high joint speed
Application		Handling, palletizing, depalletizing, cutting, grinding
Electric Cabinet Configuration		G7

### INSTALLATION INTERFACE DIAGRAM



### MOTION RANGE DIAGRAM





# CRP-RA07A-08

# CRP-RA09A-07

## INDUSTRIAL ROBOT HANDLING APPLICATION



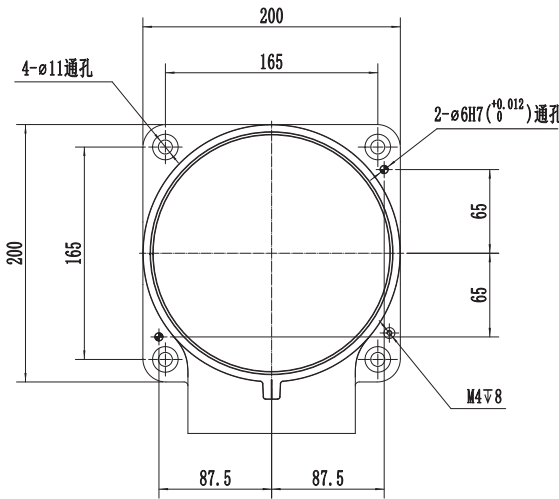
### FUNCTIONAL FEATURES

- Adopt modular design to effectively reduce the failure rate of the whole machine.
- Well-knit design makes the robot more convenient in small space.
- The arm span is 712/916mm. It has strong payload capacity, and rated payload 7 Kg/6 kg. It is easily applied in multi application.
- Lighter structure design than other same level product, so it is easy to install inside a system or to mount upside -down
- High rigidity arm and top level servo control technology guarantee the smoothness and stability while the movement.
- Built-in cable and external cable fixing base to meet customization requirements.
- Adopt leak-proof structure
- High expansibility, multiple user bracket installation platforms are set on the robot body, which is convenient for users to fix cables and related auxiliary tools.

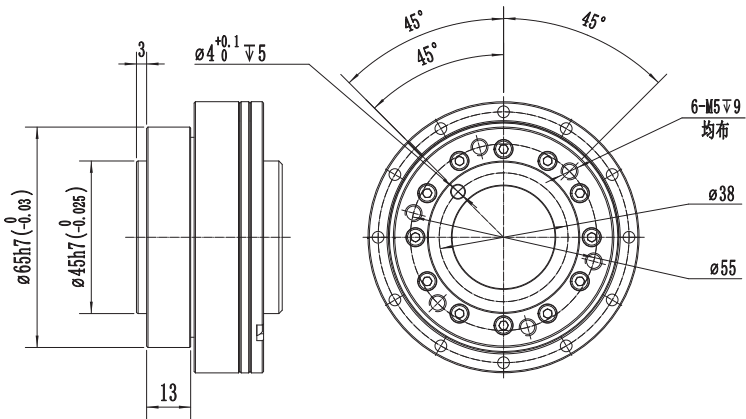
### ROBOT BODY TECHNICAL PARAMETERS

Model	CRP-RA07A-08	CRP-RA09A-07
Arm form	Vertical multiple joints	
Degree of freedom	6 axis	
Maximum payload	8KG	7KG
Repeated positioning accuracy	±0.02mm	±0.03mm
Maximum reaching distance	712mm	916mm
Robot body weight	44KG	46KG
Installation mode	Ground, upside down mounting	
Maximum travel	axis 1	-170°~170°
	axis 2	-44°~188°
	axis 3	-62°~180°
	axis 4	-185°~185°
	axis 5	-120°~125°
	axis 6	-360°~360°
Maximum speed	axis 1	400°/S
	axis 2	340°/S
	axis 3	370°/S
	axis 4	535°/S
	axis 5	411°/S
	axis 6	698°/S
Allowable torque	axis 4	16.2N.m
	axis 5	16.2N.m
	axis 6	9.5N.m
Allowable moment of inertia	axis 4	0.38kg.m²
	axis 5	0.38kg.m²
	axis 6	0.16kg.m²
Noise level		<75dB(A)*
Installation environment	ambient temperature	0~45℃
	relative humidity	20~85%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: Flammable or corrosive liquids or gases, electrical sources of interference
IP level	Body IP54 , wrist IP65	
Advantage features	Compact structure, high speed, high precision, high expansibility and easy operation	
Application	welding cutting, assembly, handling, marking, grinding	
Electric Cabinet Configuration	G5	

### INSTALLATION INTERFACE DIAGRAM

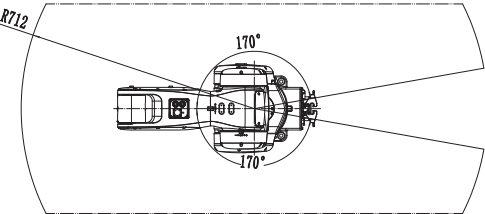
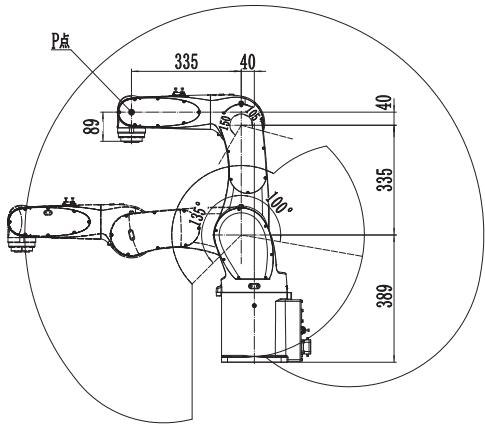


Installation Dimension of Base

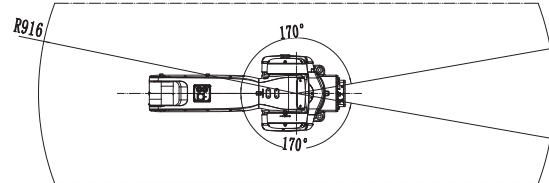
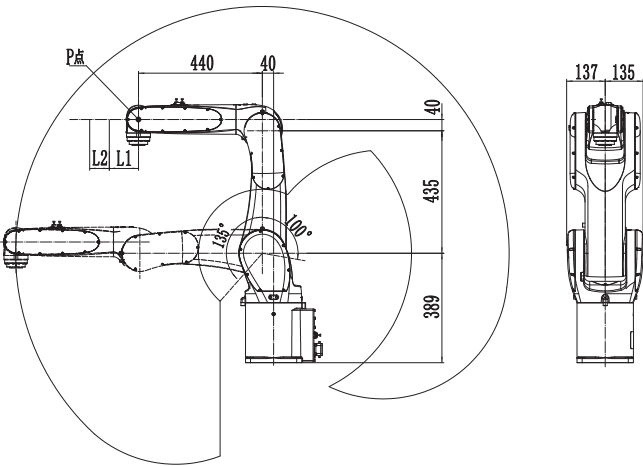


Flange Dimensions

### MOTION RANGE DIAGRAM



CRP-RA07A-08



CRP-RA09A-07

**CRP-RA09A-06(T3)**

## PCB BOARD ROBOT



## THE INTRODUCTION AND FEATURES OF ROBOT

· CRP-RA09A-06 (13) is mainly customized for the production and application of PCB board industry. It is applied in the loading and unloading process of PCB board industry. In order to adapt to the PCB industry, CRP robot with light weight, simple application, high speed and lower cost is launched to meet the needs of customers for robots.

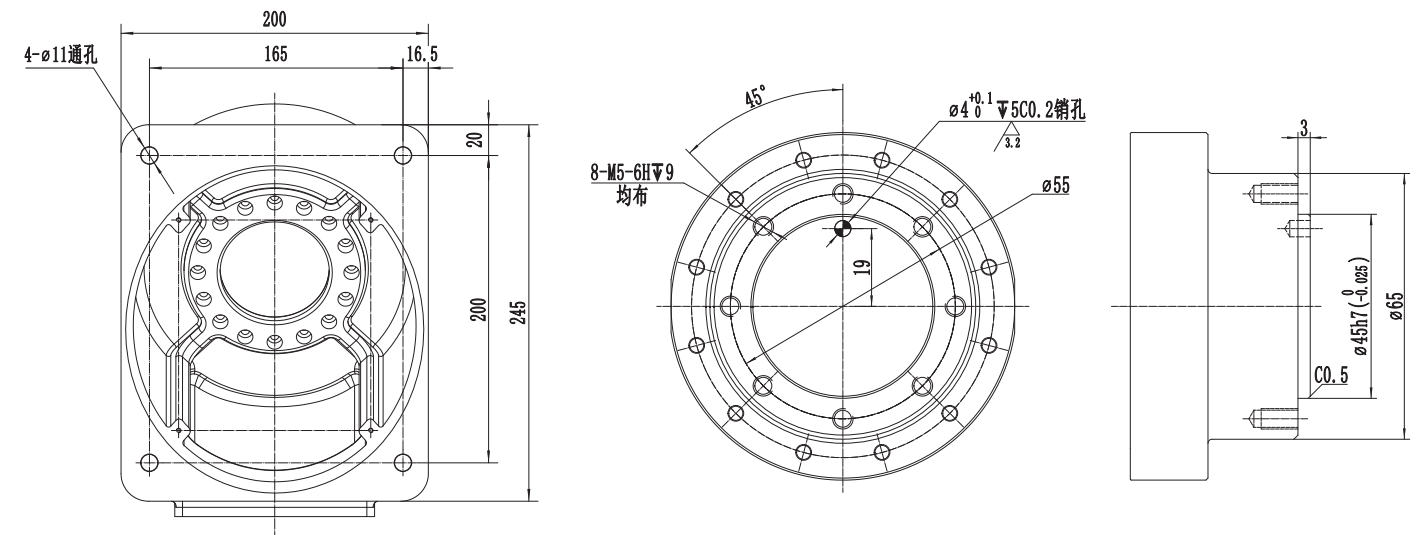
## FUNCTIONAL FEATURES

- Axis 2 adopts directly connected structure to effectively improve accuracy;
- Motor and reducer adopt spline connection to be more stable
- Adopt customized structure to effectively avoid interference and meet the need of application in narrow space;
- Compact structure and small volume
- Light weight and fast speed

## ROBOT BODY TECHNICAL PARAMETERS

Model		CRP-RA09A-06(T3)
Arm form		Vertical multiple joints
Degree of freedom		3 axis
Maximum payload		10KG(Rated Load:7kg)
Repeated positioning accuracy		±0.03mm
Maximum reaching distance		876mm
Robot body weight		37KG
Installation mode		Ground, upside down mounting、side mounting
Noise level		<75dB(A)*
Maximum travel	axis 1	-142°~188°
	axis 2	-62°~180°
	axis 3	-120°~125°
Maximum speed	axis 1	297.5°/S
	axis 2	426.5°/S
	axis 3	450°/S
Allowable torque	axis 3	16.2N.m
Allowable moment of inertia	axis 3	0.38kg.m²
Installation environment	ambient temperature	0~45℃
	relative humidity	20~85%( No condensation)
	vibration	Under 0.5 G
	Others	Robot installation must be away from: flammable or corrosive liquids or gases, electrical sources of interference
IP level		Body IP54 , wrist IP65
Advantage features		Compact structure, high speed, high precision, high expansibility, easy to operate
Application		Assembly, handling, marking
Electric Cabinet Configuration		G5

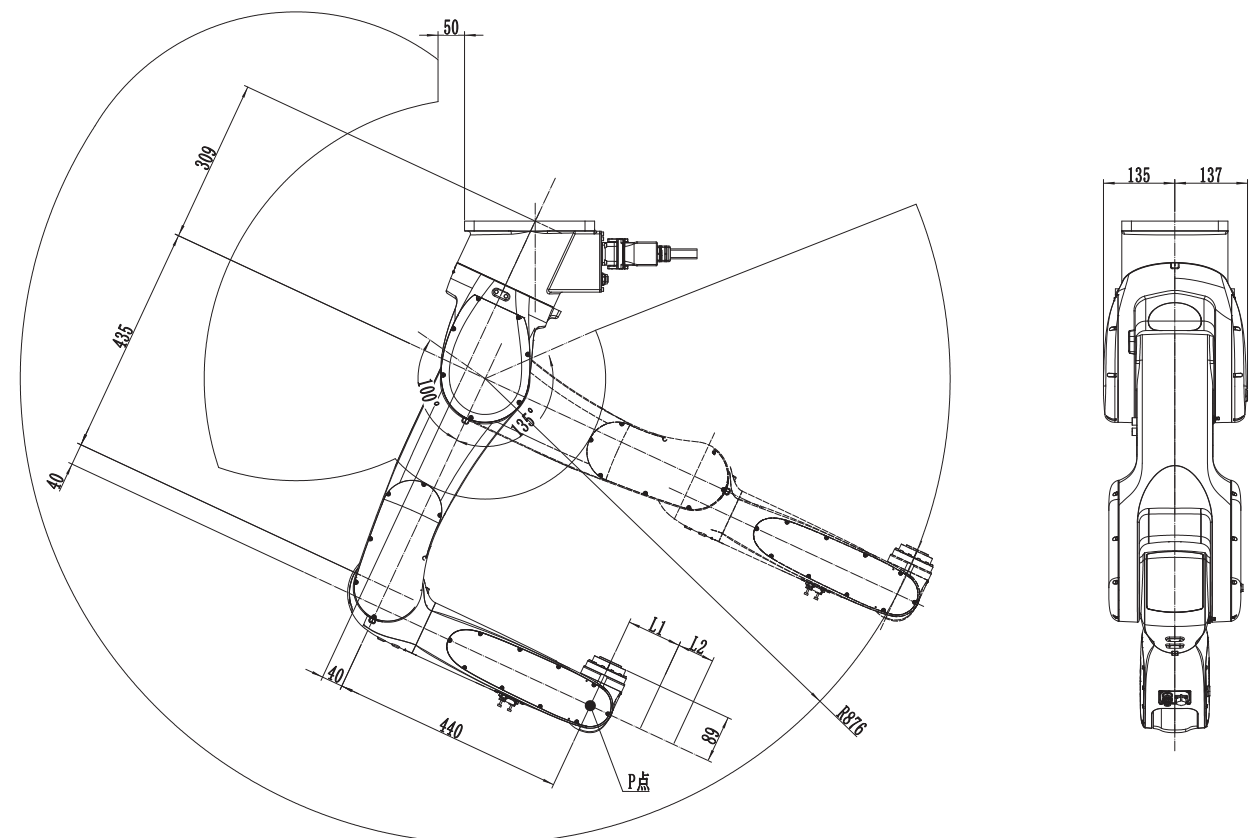
## INSTALLATION INTERFACE DIAGRAM



### Installation Dimension of Base

### Flange Dimensions

### MOTION RANGE DIAGRAM





# CRP-RS04-03

# CRP-RS06-06

## SCARA ROBOTS

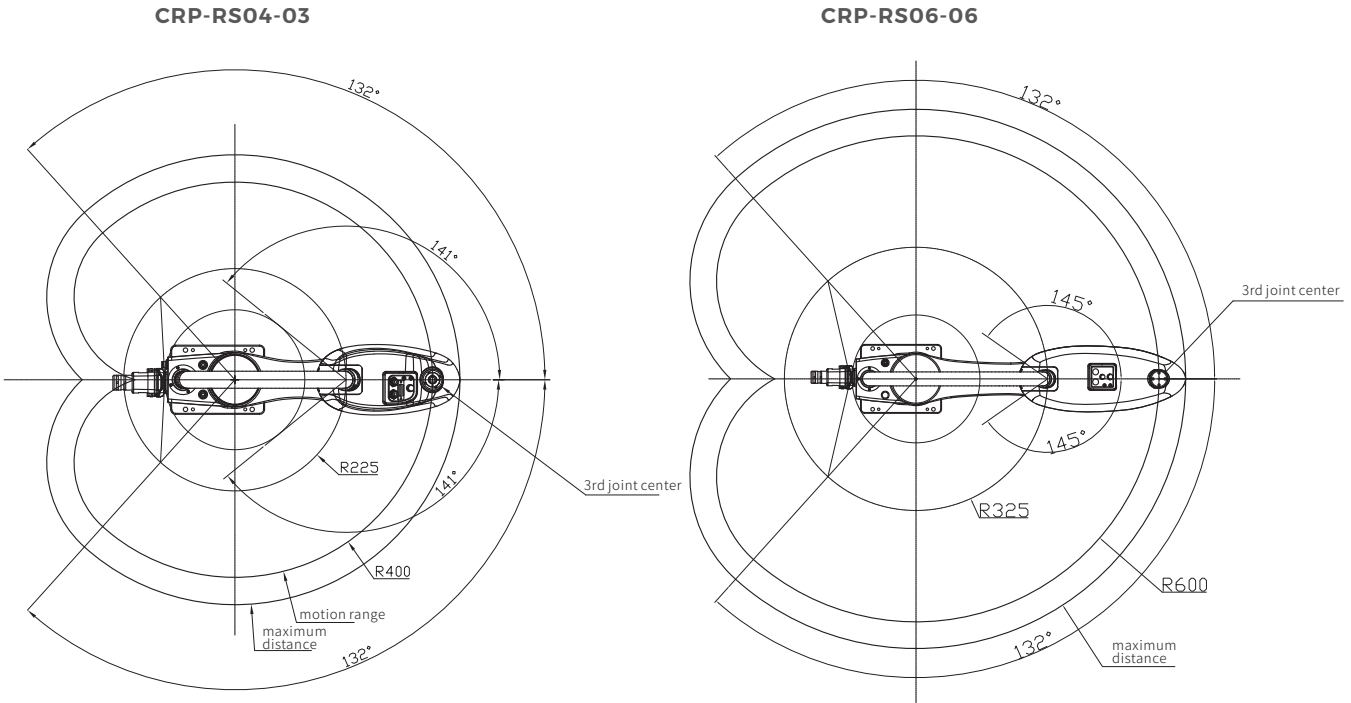
### FUNCTIONAL FEATURES

- Compact and flexible structure, fast running speed, high transmission accuracy and low noise
- Highly rigid arm design realizes high load and high speed in one package
- Available in 600 and 400 mm arm span; 3kg or 6kg payload.
- Adapt to G3 control cabinet, provide 23 input and 23 output custom IO:support serial port, network, USB and other interface forms
- Suitable for handling, palletizing, assembly, 3C and other application fields.

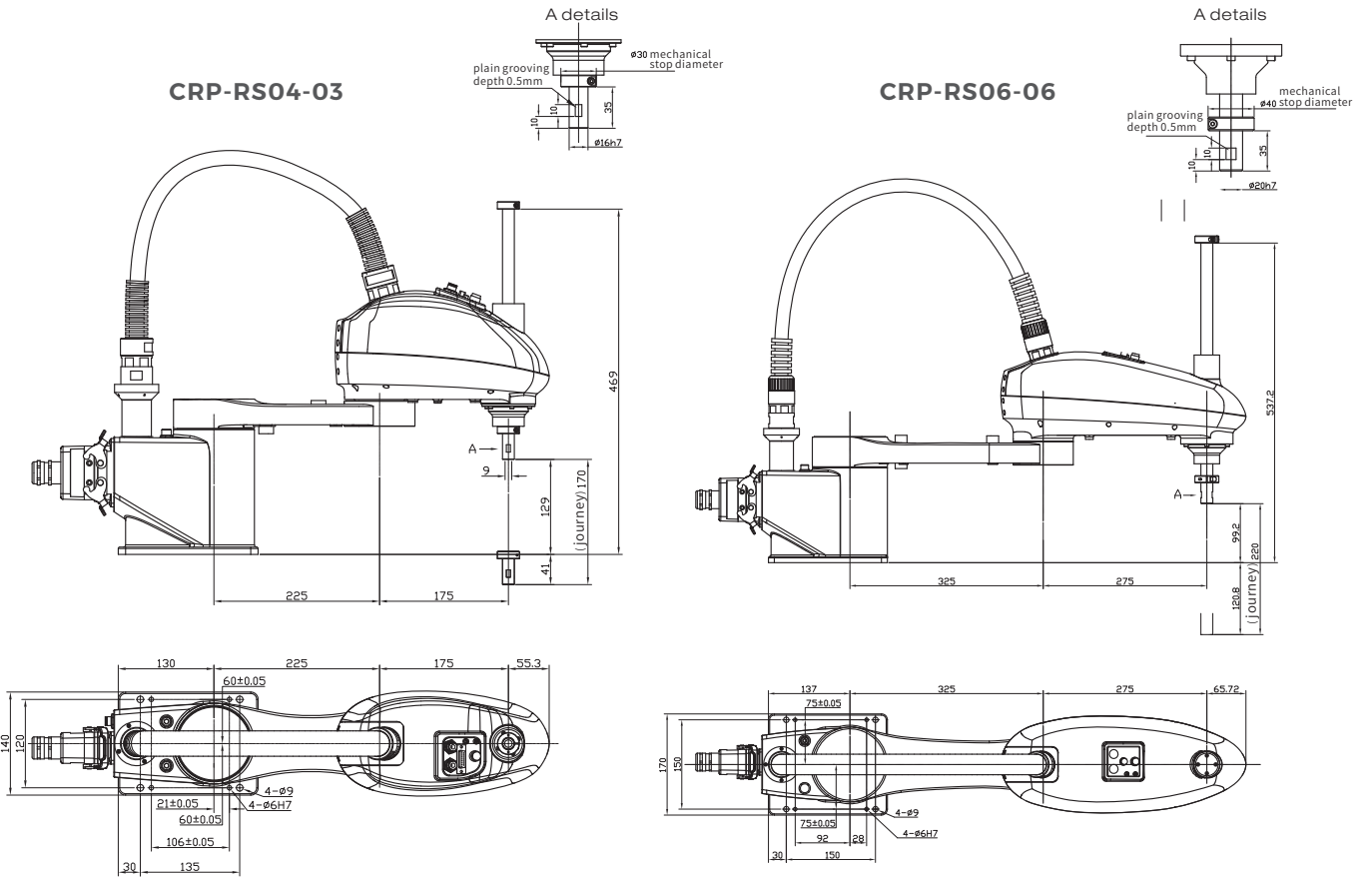
### ROBOT BODY TECHNICAL PARAMETERS

Robot Model		CRP-RS04-03	CRP-RS06-06
Function		Material handling, 3C	Material handling, 3C
Total axes		4	4
Maximum reach		400mm	600mm
Payload	Rated load	1kg	3kg
	Maximum load	3kg	6kg
Permissible inertial torque of rotating axis	Rated load	0.005kg.m²	0.01kg.m²
	Maximum load	0.05kg.m²	0.12kg.m²
Repeated positioning accuracy	1st axis + 2nd axis	±0.01mm	±0.02mm
	3rd axis (elevating axis)	±0.01mm	±0.01mm
	4th axis (rotation axis)	±0.01 °	±0.01 °
Max speed	1st axis	720 °/sec	450 °/sec
	2nd axis	720 °/sec	720 °/sec
	3rd axis (elevating axis)	1000mm/sec	1000mm/sec
	4th axis (rotation axis)	2500 °/sec	2000 °/sec
Max operating area	1st axis	±132 °	±132 °
	2nd axis	±141 °	±145 °
	3rd axis (elevating axis)	170mm	220mm
	4th axis (rotation axis)	±360 °	±360 °
Installation method		Floor mounted	Floor mounted
Robot body weight		13Kg	17Kg
Power consumption		0.7kw	0.8kw
Installation environment	Temperature	0~45℃	0~45℃
	Humidity	20~80% RH(no condensation)	20~80% RH(no condensation)
	Vibration	Under 4.9M/S²	Under 4.9M/S²
Electric Cabinet Configuration		G6	

### MOTION RANGE DIAGRAM



### INSTALLATION INTERFACE DIAGRAM



# CRP-RC08-05

## INDUSTRIAL ROBOT 6-axis Light-duty Robot



### PRODUCT INTRODUCTION

·Crobotp six-axis light load robot has inherent characteristics such as safety, lightness, high flexibility, intelligence and convenience, so that people and robots are no longer separated by cold railings, and people can work together with robots, while robots It is no longer just a tool, but a personal assistant and intimate partner.

### FEATURES

- High safety: From hardware to software, multiple redundant designs are adopted, which can work together with humans to ensure the safety of personnel after a collision, and realize the sharing of working space between machines and humans.
- Easy to program: It has the function of dragging and teaching. The programming is simple, and it can quickly respond to the production mode of small batches and multiple varieties. The programming style conforms to ergonomic habits, and there is no professional requirement for programming users.
- Simple maintenance: The entire use process of the robot is maintenance-free, and the body adopts a modular design, which is quick and convenient to repair and replace parts. The comprehensive use cost of users is low, the overall project investment is small, and the return period is short.
- Strong reliability: Crobotp controller is the most mature industrial robot controller on the market at present (tens of thousands of units in the market, 24 hours of non-stop work fully proves the long-term reliability of our controller in the industrial environment).
- Simple and easy to use: the body is light in weight, easy to handle and transport, no special lifting equipment is required, and the deployment is fast.
- Stable communication: The control system to the driver adopts the EtherCAT communication method, which has strong anti-interference ability, fast communication speed, large amount of data interaction, better drag feel, and more sensitive collision response.
- Software customization: The software is completely self-developed and has all source codes, which can quickly respond to customers' customization needs.

### ROBOT BODY TECHNICAL PARAMETERS

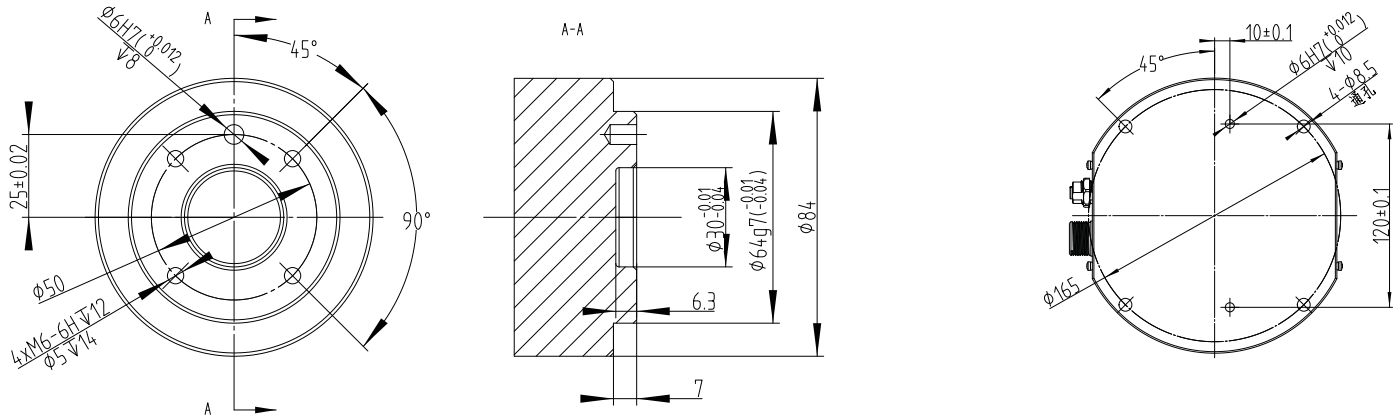
Robot model	CRP-RC08-05
Weight	22.5kg
Maximum payload	5kg
Maximum arm length	904mm
Joint range	±360°all joints
Speed	Joint maximum 180°/s tool about 1m/s
Repeatability	+0.06mm
Degree of freedom	6
Features	Drag and teach, human-machine collaboration, easy to operate
Application scenario	Handling Grinding Assembly
Noise	<65dB(A)
Protection class	IP54
Power consumption	About 200W when running a typical program
Temperature	The temperature of the robot installation environment should be within 0-50°C
Power supply	100-240V AC 50/60Hz 1000W
Expected operating life	30000hours
Connecting cables	6m
Installation method	Any
Electric Cabinet Configuration	CRP-X1-S100

### ELECTRIC CABINET TECHNICAL INDICATORS

Electric cabinet model	CRP-X1-S100
weight	14.5Kg
Power supply	100-240V AC 50/60HZ 1000W
Teach Pendant Cable	6m cable between teach pendant and control box
Control box size	466mm*173mm*329.5mm
Control box I/O port	23 digital inputs, 23 digital outputs, 4 analog outputs, encoder signal interface
I/O power	24V2A in the control box
Communication	EntherNet/IP Adapter
Operation mode	Teaching, dragging, process programming (palletizing, vision, tracking, spraying)
Control servo	EtherCAT bus control, 100M speed, U-level synchronization accuracy
Software PLC function	Ladder diagram editing, 5000 steps
Protection class	IP20
Teaching pendant	10.4TFT-LCD, keyboard + touch screen, mode selection switch, emergency stop button



### MOTION RANGE DIAGRAM



# CRP-VLS-160GA-V01

## LASER SEAM TRACKER



### ADVANTAGES OF LASER SEAM TRACKER

- Support a variety of weld types, fast switching
- Improve productivity and yield
- Greatly reduce the impact of poor workpiece consistency on welding quality
- The welding torch can be in the ideal position
- Compensation for production, equipment and operation tolerances
- For complex weldments, it can greatly reduce the workload of robot teaching and programming
- Some scenes can realize the robot exemption from teaching
- Non-contact welding seam tracking, saving fixture production costs for customer
- Seamless connection with CRP robots
- The sales and after-sales support of laser seam tracker and the robot are in the same team, reducing the time and cost of communication with customers

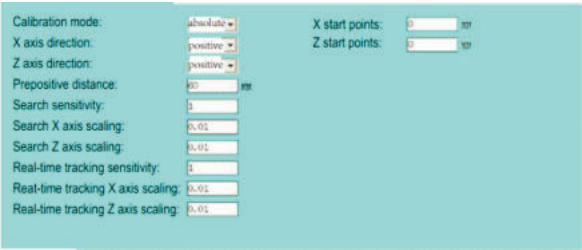
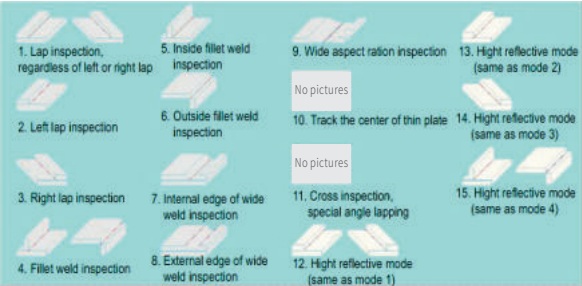
### TECHNICAL CHARACTERISTICS

- Gap range: 1.0-15.0mm
- Horizontal error: 0.1mm
- Height error: 0.1mm
- Standard installation height: 160mm
- Average field of view width: 50mm
- The nearest height: 130mm
- The farthest height: 200mm
- Can be used for all kinds of gas shielded welding
- A variety of weld shape options, suitable for different weld types; expert fuzzy control, intelligent identification of different weld characteristics
- According to the welding seam type, real-time display of current welding seam deviation, welding seam width, misalignment amount and other information to facilitate welding process optimization
- Real-time tracking of weld level, high and low directions
- Strong anti-interference. It can still accurately identify the weld under strong arc interference

### APPLICABLE SCENE

- Real-time tracking scenes that require forward-looking distance, and the minimum forward-viewing distance is 35mm
- Welding current <=200A
- Larger curvature of the weld

### PROCESS AND INTERFACE



# CRP-VLS-160HB-V01

## LASER SEAM TRACKER



### ADVANTAGES OF LASER SEAM TRACKER

- Support a variety of weld types, fast switching
- Improve productivity and yield
- Greatly reduce the impact of poor workpiece consistency on welding quality
- The welding torch can be in the ideal position
- Compensation for production, equipment and operation tolerances
- For complex weldments, it can greatly reduce the workload of robot teaching and programming
- Some scenes can realize the robot exemption from teaching
- Non-contact welding seam tracking, saving fixture production costs for customer
- Seamless connection with CRP robots
- The laser weld tracker and the robot sales and after-sales support are in the same team, reducing the time and cost of communication with customers

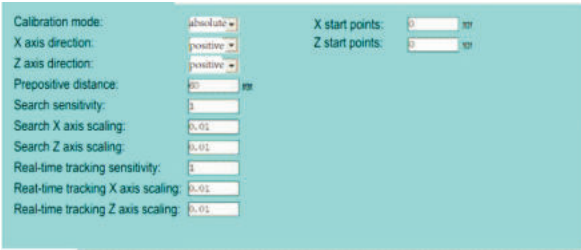
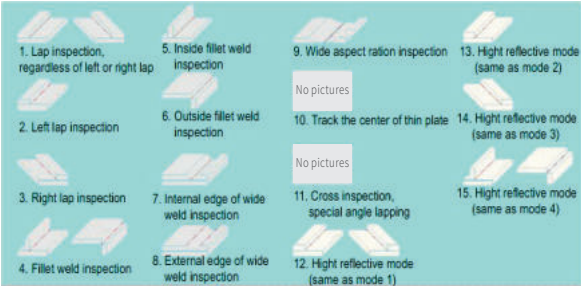
### TECHNICAL CHARACTERISTICS

- Gap range: 0.8-10.0mm
- Horizontal error: 0.05mm
- Height error: 0.05mm
- Standard installation height: 160mm
- Average field of view width: 35mm
- The nearest height: 145mm
- The farthest height: 185mm
- Can be used for all kinds of gas shielded welding
- A variety of weld shape options, suitable for different weld types; expert fuzzy control, intelligent identification of different weld characteristics
- According to the welding seam type, real-time display of current welding seam deviation, welding seam width, misalignment amount and other information to facilitate welding process optimization
- Real-time tracking of weld level, high and low directions
- Strong anti-interference. It can still accurately identify the weld under strong arc interference

### APPLICABLE SCENE

- Minimum forward-viewing distance 90mm
- Resistant to strong arc and splash
- Welding current <=200A
- Real-time tracking of long straight welds
- Suitable for storing points, scanning before welding (such as tube sheet) scenes

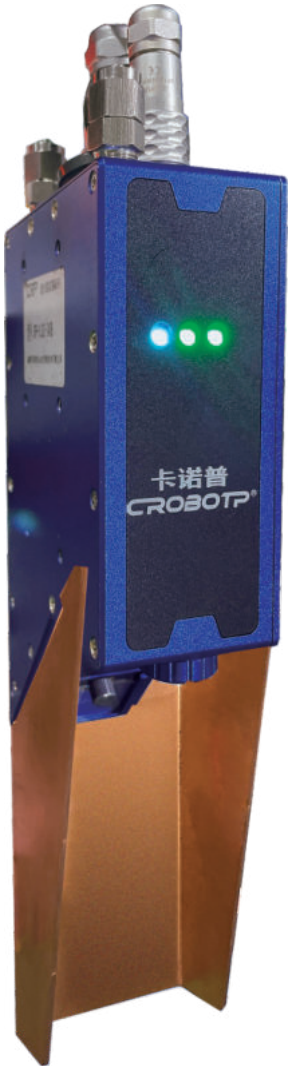
### PROCESS AND INTERFACE





# CRP-VLS-240GB-V01

## LASER SEAM TRACKER



### ADVANTAGES OF LASER SEAM TRACKER

- Support a variety of weld types, fast switching
- Improve productivity and yield
- Greatly reduce the impact of poor workpiece consistency on welding quality
- The welding torch can be in the ideal position
- Compensation for production, equipment and operation tolerances
- For complex weldments, it can greatly reduce the workload of robot teaching and programming
- Some scenes can realize the robot exemption from teaching
- Non-contact welding seam tracking, saving fixture production costs for customer
- Seamless connection with CRP robots
- The sales and after-sales support of laser seam tracker and the robot are in the same team, reducing the time and cost of communication with customers

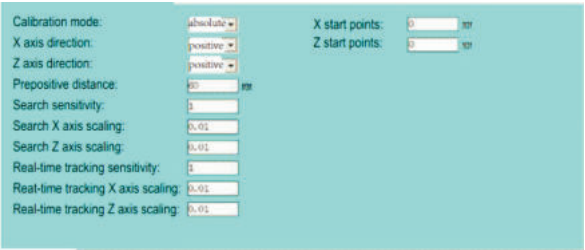
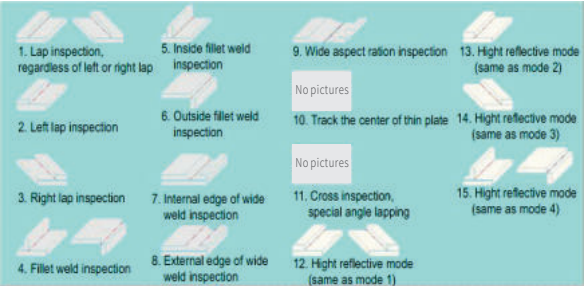
### TECHNICAL CHARACTERISTICS

- Gap range: 1.5-20.0mm
- Horizontal error: 0.1mm
- Height error: 0.1mm
- Standard installation height: 240mm
- Average field of view width: 60mm
- Nearest height: 210mm
- The farthest height: 290mm
- Can be used for all kinds of gas shielded welding
- A variety of weld shape options, suitable for different weld types; expert fuzzy control, intelligent identification of different weld characteristics
- According to the welding seam type, real-time display of current welding seam deviation, welding seam width, misalignment amount and other information to facilitate welding process optimization
- Real-time tracking of weld level, high and low directions
- Strong anti-interference. It can still accurately identify the weld under strong arc interference

### APPLICABLE SCENE

- Minimum forward-viewing distance 110mm
- Resistant to strong arc and splash
- Welding current <=400A, water-cooled heat dissipation can reach 500A
- Suitable for storing points, scanning first and then welding (such as powder tanker tube sheet, tower foot, steel structure, etc.) scenes

### PROCESS AND INTERFACE



# CRP-VLS-330GB-V01

## LASER SEAM TRACKER



### ADVANTAGES OF LASER SEAM TRACKER

- Support a variety of weld types, fast switching
- Improve productivity and yield
- Greatly reduce the impact of poor workpiece consistency on welding quality
- The welding torch can be in the ideal position
- Compensation for production, equipment and operation tolerances
- For complex weldments, it can greatly reduce the workload of robot teaching and programming
- Some scenes can realize the robot exemption from teaching
- Non-contact welding seam tracking, saving fixture production costs for customer
- Seamless connection with CRP robots
- The sales and after-sales support of laser seam tracker and the robot are in the same team, reducing the time and cost of communication with customers

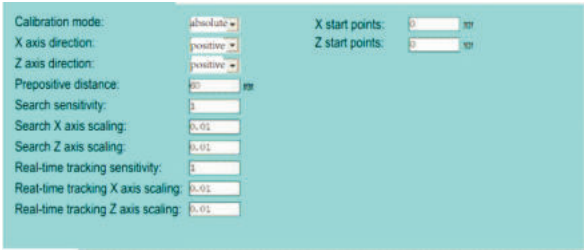
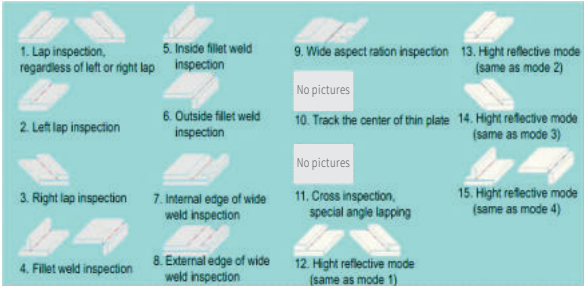
### TECHNICAL CHARACTERISTICS

- Gap range: 1.5-20.0mm
- Horizontal error: 0.1mm
- Height error: 0.1mm
- Standard installation height: 330mm
- Average field of view width: 80mm
- Nearest height: 290mm
- The farthest height: 390mm
- Can be used for all kinds of gas shielded welding
- A variety of weld shape options, suitable for different weld types; expert fuzzy control, intelligent identification of different weld characteristics
- According to the welding seam type, real-time display of current welding seam deviation, welding seam width, misalignment amount and other information to facilitate welding process optimization
- Real-time tracking of weld level, high and low directions
- Strong anti-interference. It can still accurately identify the weld under strong arc interference

### APPLICABLE SCENE

- Minimum forward-viewing distance 103mm
- Resistant to strong arc and splash
- Welding current <=500A
- It is mainly suitable for the scene requiring high visual distance and large field of view, such as fan, box interior and other storage point welding scenes. It also suitable for real-time tracking in large visual field and high visual field with strong anti-splash ability
- Limited application scenarios: some scenarios with limited space; For example, in tower foot welding, it needs a long time to weld.

### PROCESS AND INTERFACE



# Tracer P1

## 3D WELDING VISION SYSTEM



### ADVANTAGES OF 3D Welding Vision System

- Greatly reduce the impact of workpiece in raw materials and team errors on welding quality
- For complex workpiece, it can greatly reduce the robot teaching programming workload
- Part of the scene can be drawings without teaching
- With high-speed real-time scanning, it can output 2 to 10 frames of point cloud data in 1 second.
- It has Industrial accuracy and 3d point cloud repetition accuracy can be up to 0.1mm.
- Adopt anti-splash protection device to avoid welding slag splash damage lens.
- High temperature resistance and reliable operation in work.

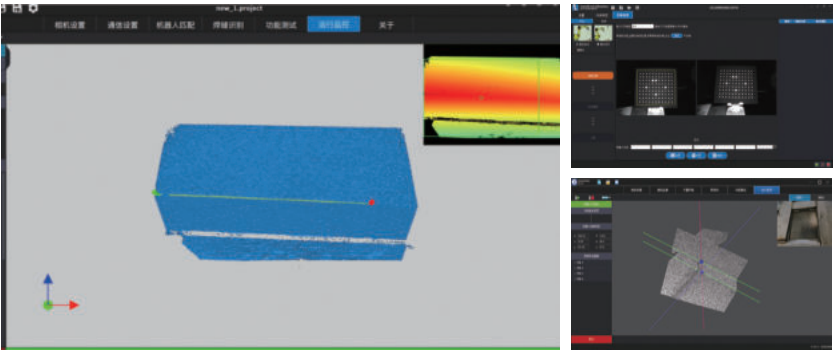
### TECHNICAL CHARACTERISTICS

- 3D vision adopts micro-structured light technology to realize three-dimensional surface scanning of welding parts so it can output the welding track. In cooperation with robots, it can realize the functions of features extraction of complex welds, track locating, workpiece alignment and others.

### APPLICABLE SCENE

- Scene: Steel structure and carriage board
- Material: carbon steel fillet weld (three-side splicing), workpiece without polishing treatment
- Trajectory type: straight trajectory(arc is not applicable)

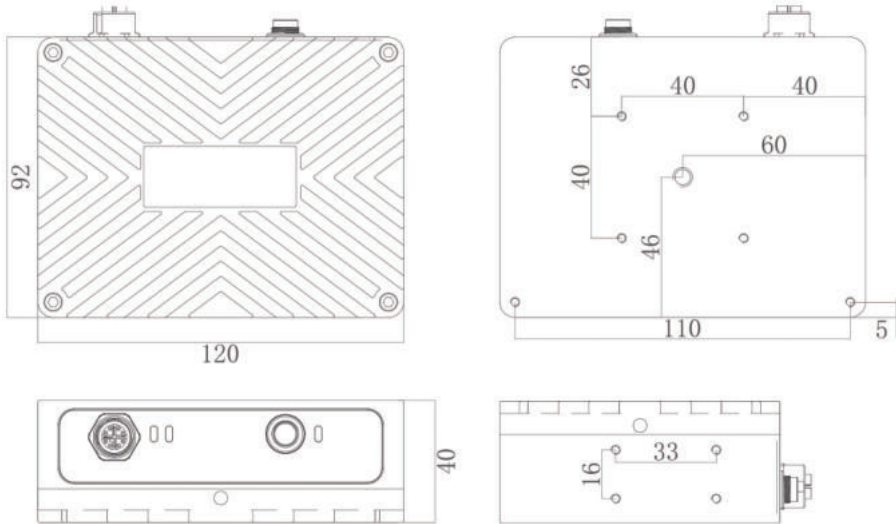
### PROCESS AND INTERFACE



### TECHNICAL PARAMETERS

3D Welding Vision System			
Model	Tracer P1	Weight	750g
Theory	Binocular structured light	Data Interface	TCP/IP, support POE
Light source	Infrared laser	Overall Power Consumption	5W
Working distance	250~500mm	Operating environment	Indoor
FOV	H55°xV35°	Working Temperature	-10~70℃
Repeated Accuracy	±0.5mm	Working Humidity	20%~65%(No condensation)
Depth map resolution	960x600@max 5fps	IP	IP65
Dimension	120x92x40mm	Materials	Aluminum Alloy
Notes: The repeated accuracy means that the standard laboratory environment is obtained by the standard test method, and the specific user environment may affect the accuracy.			

### INSTALLATION INTERFACE DIAGRAM



### APPLICATION OF THE SCENE





# GYXW-V2

## HIGH-VOLTAGE SEARCHING BOX



### THE PURPOSE

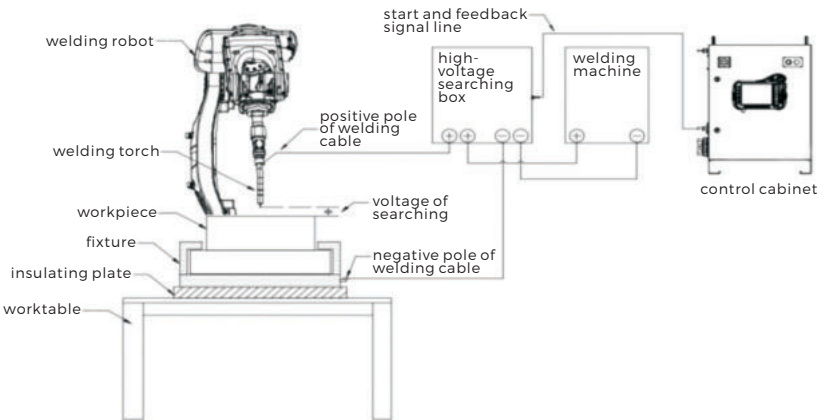
- At present, when welding robots are welding medium-thick plates, due to the workpiece blanking or inaccurate assembly, the welding points (arc starting point, intermediate point, and end point) are inaccurate, causing the deviation of the welding bead.
- This equipment cooperates with the welding robot's welding wire locating function, feedbacks the signal that the welding wire hits the workpiece, the robot automatically calculates the position deviation, corrects the position point, and enables the robot to find the actual welding point.

### THE CHARACTERISTICS

- The output voltage is about 425V±5%, which can effectively penetrate oil stains, rust stains, and water stains;Fast searching speed;
- The current limit design has been made internally, which can effectively control the current that is lower than the safety current of the national standard;
- During searching, since the welding cable is disconnected from the welding machine, the voltage will not enter the welding machine, so it will not damage the welding machine.

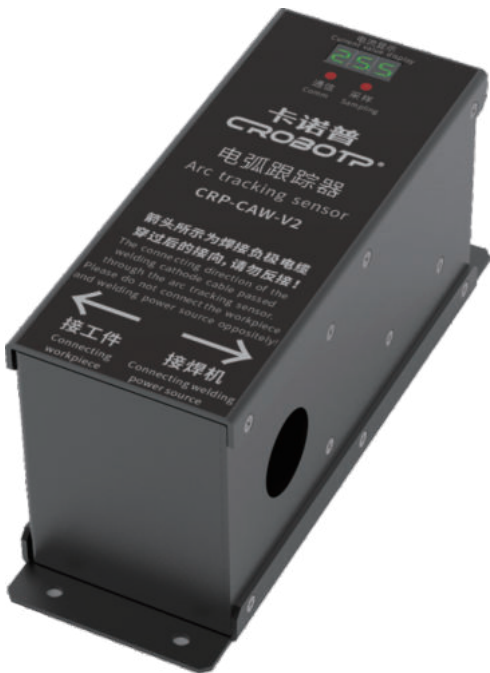
### TECHNICAL INDEX

Name	High-voltage searching box
Model	GYXW-V2
Input power	AC220V±10%, 50HZ, with reliable grounding
Output power	DC425V±5%, current<=5ma
Welding current carrying current	500A, 85% duty cycle
The resistance of the positive and negative poles of the output terminal of the welding cable	>=10K Ω
Temperature and humidity	Temperature: -20°C to +45°C; Relative humidity: no more than 75%RH at 40°C; no more than 95%RH at 20°C
Dimensions	530mmX255mmX290mm
Weight	16KG



# CRP-CAW-V2

## ARC TRACKING SENSOR



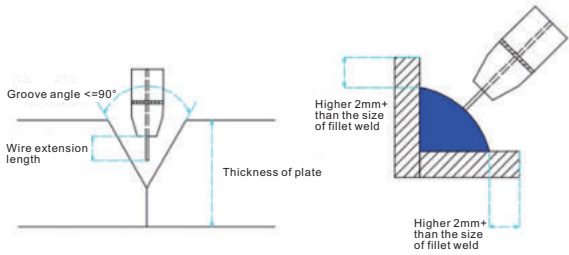
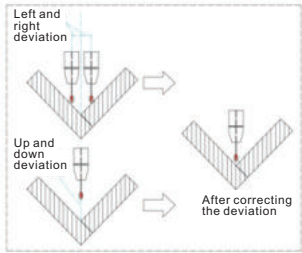
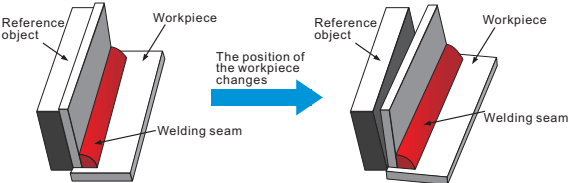
### TECHNICAL CHARACTERISTICS

CRP-CAW-V2 is a universal arc tracking sensor researched and developed independently by CRP Automatic, not affected by arc light and dust during the working process, so it has high reliability. It can be used for welding seam tracking under different welding conditions by fuzzy control. This sensor can work with CROBOTP robot control system to track fillet weld, butt weld, lap weld and other weld types. Under the situation of no changing the mechanical structure, it can achieve the seam tracking function only through simple installation and commissioning, thus it is convenient and easy to use, and improves the welding production efficiency of medium and thick plates with low precise incoming materials and assembly.

- This sensor is used when the welding seam of medium and thick plate workpiece is deformed or deviated in CO2/ MAC welding process;
- The arc seam tracker samples the current of swing welding in the welding seam in real time;
- The system judges the difference between the current weld and the preset current according to the current amplitude, and confirms its up, down, left, and right deviation values;
- The system automatically corrects the trajectory of the current robot;

### APPLICATION CONDITIONS

- Gas: CO2 ,MAG
- Welding wire diameter: 1.0mm-1.6mm
- Wire extension length: 15mm-25mm
- Type of welded joints: T -type fillet weld ( 1-2mm gap is allowed ), V -type groove ( 30, 45°)
- Welding conditions: current >180A, welding speed <15mm/s, welding length >100mm
- Swing conditions: width: 1.5mm-5mm, swing frequency: 1.5HZ-4Hz
- Swing type: Z shape
- Welding form: DC / pulse



### PROCESS AND INTERFACE

Left/right offset parameter

Left/right offset fuction	25
Left/right offset sensitivity	0
Left/right offset quantity	0
Left/right minimum offset	0
Left/right total maximum offset quantity	500
Left/right maximum offset quantity each time	1
Left/right offset start count	5

Process No. Annotation

Up/down offset parameter	
Up/down offset fuction	08
Up/down reference current	2
Offset coordinate system	2
Sampling time	200
Up/down offset sensitivity	25
Up/down offset quantity	0
Up/down minimum offset	0
Up/down total maximum offset quantity	500
Up/down maximum offset quantity each time	1.0
Up/down offset start count	5
Up/down reference sampling start count	5
Up/down reference sampling count	100
Up/down reference current constant	1

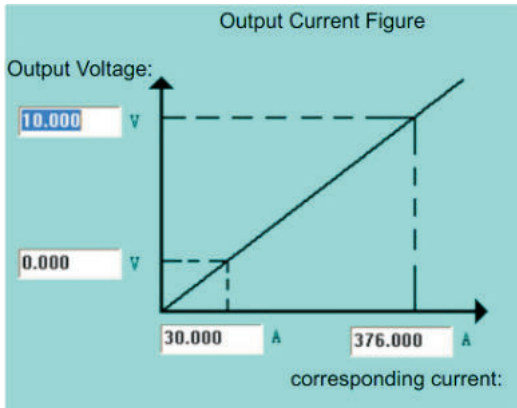


# CRP ROBOT SYSTEM

## System function introduction (welding function)

### 1. Welding (See detail-CRP-S40, S80 Welding Procedure Specification)

#### · Analog control/Digital communication control



Analog control: Robot system control the welding machine to start arc, adjust current, voltage, supply gas by I/O and analog output(0-10V). This analog control can easily match varies analog interface welding machine.

Welding Machine Control Mode: Digital Control Welding Machine Communication State: ●

Power Source Manufacturer: Megmeet

Welding Machine Selection: Enable

Welding Machine Digital Control Settings: DC SYNER

Welding Machine Working Mode:

Communication: Controller MAC Address:

Communication Interface: Welding Machine MAC Address:

Digital control: Robot system can communicate current, voltage, arc start, arc end, wire feeding, gas supply, position searching signal with welding machine by CAN communication. Simple wiring, anti-interference. Digital control can communicate with Megmeet, Aotai welding machine.

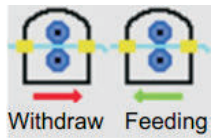
#### · Welding process speed and speed rate adjustment

ARCSTART 0 % 100.0

mm/s

Welding process speed: In the welding instruction, setting the speed of the motion instruction during the welding process, including line speed (mm/s) and rate speed (%). It's convenient for the debugging precess and the test running, run by the practical speed of the instruction during the test running, and run by the setting speed of the instruction during regular welding process.

#### · Manual wire feeding/withdraw



On the teaching pendant there are wire feeding and the wire withdraw button, you can feeding or withdraw the welding wire during the manual mode by the setting speed of the welding machine, it's easy to adjust the wire extension.

#### · Manual wire jogging out/back



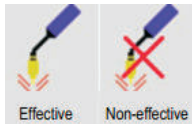
On the teaching pendant there are wire jogging out and jogging back button, you can jogging out or back the welding wire at a setting timing on the manual mode by the setting speed of the welding machine, it's convenient to adjust the wire extension slightly

#### · Gas detection



There is gas detection button on the teaching pendant, easy to detect the protective gas.

#### · Simulating welding



Simulating welding follow the actual welding track but no arc strat, wire feeding, gas supply are carried out. The track and the speed are the same with the actual welding process. There is simulating welding button on the teaching pendant, it can be use to check welding program or repair welding.

#### · Welding monitoring

Welding Monitoring

Output Current	Output Voltage
Feedback Current	Feedback Voltage
Wire Feeding Speed	0.000 m/min
Welding Time	0.000 S
Run Time	0.000 S
Duty Cycle	0 %

Welding monitoring can directly examine: current, voltage, welding time, program function time, duty cycle, etc. It's convenient for the program analysis and optimization.

#### · Lead-lag gas control

Gas supply lead time : 0.00 sec

Gas supply lag time : 0.00 sec

Lead-lag gas control means supply gas in advance and maintain the gas supply after the welding process is over. Supply gas in advance makes it's easier to start arc and reduce spattering. Maintain the gas supply after the welding process keeps the melton pool isolated from air during the cooling process.

#### · Arc break detect

Once the arc breaks during the welding process the system will stop the robot and ring the alarm, avoiding leak welding.

#### · Arc break point maintain

If the arc breaks during the welding process the robot will record the arc breaking point, after examination and rule-out the robot will start the program from the same command line of the arc break point, and the robot will run to the arc break point then start arc. The arc break point will be removed after the program or the welding process reset.

#### · Short weld length control

Because the grid type workpiece have a short weld length and multi welding point, CRP has optimize algorithm and track plan to realize short-distance quick start and stop, so it's effecient.

# CRP ROBOT SYSTEM

## System function introduction (welding function)

· Position Searching

· Starting Point Searching

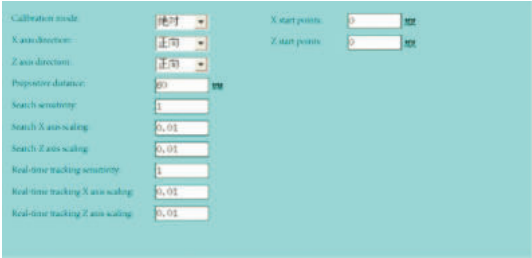
Contact-type position searching: Using the welder as the medium, the robot uses the welder signal. The welder applies a forward voltage to the positive electrode of the welding torch. When the wire contacts the workpiece (the negative electrode of the welder), the positive voltage of the welding torch is pulled down to judge the contact of the wire with the workpiece. The robot then records the point. When the displacement of the next workpiece changes, the same contact method is used to record the position after the offset, and the robot calculates the error between the two points by the command to compensate to the working path.



· Laser Position Searching

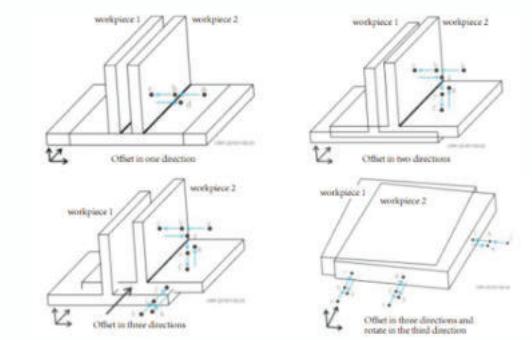
Using the laser tracker as the medium, the robot is equipped with a laser and runs on the locating path. When the laser searches for the position of the weld that meets the requirements, the feedback signal is given to the robot. The robot uses the signal fed back by the laser to find the welding position. The strating point searching function is suitable for welding starting point deviation, and the subsequent track uses arc or laser tracking.

Note: Laser position searching only support Chuangxiang and Junnuo brands.



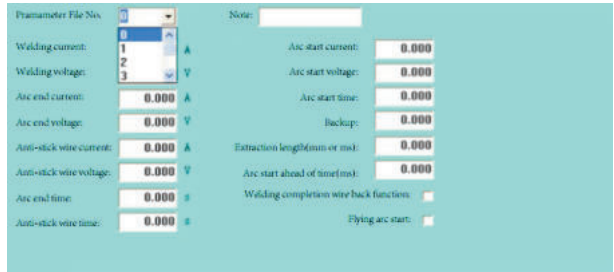
· Whole Position Searching

When the workpiece is offset as a whole, the position can be found by multi-point contact searching, and the deviation of each point can be found by counting the whole offset; then Then sort the deviation path by OFFSEtSTART. Can be achieved: fillet weld(1D, 2D, 3D, 2D+, 3D+); inner and outer diameter; point; camera, plane, etc  
The whole position searching function is suitable for occasions where the workpiece is prone to whole offset, partial offset, etc.



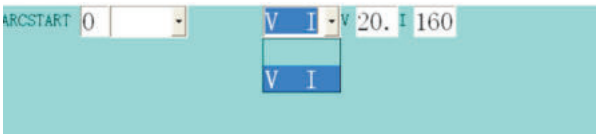
· Welding Process / Parameter Control

· Welding Process Number



Taking welding related parameters: welding current and voltage, arc starting current and voltage, arc ending current and voltage, anti-stick wire current and voltage, arc starting time, arc ending time, anti-stick wire time, welding completion wire drawing time and flying arc starting time as a parameter package, which is convenient for welding commands to call directly.

· Welding parameter control

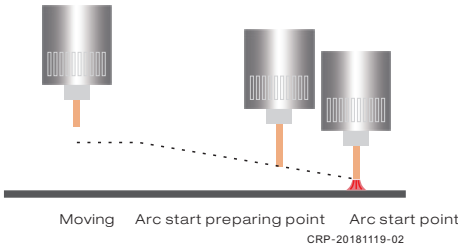


Welding commands support adjustment of welding current and voltage. It is convenient for customers to directly adjust the welding parameters in the welding procedure.

· Anti-collision Detection

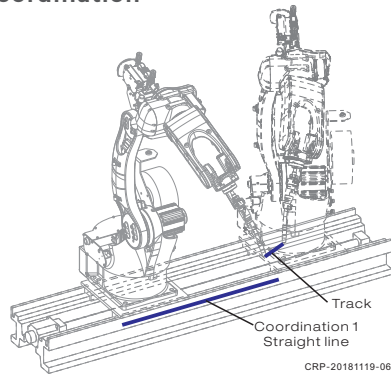
On the robot-specific terminal board, there is a set of special anti-collision detection signal interface. With the anti-collision detection switch attached to the welding torch or other fixture, the robot can be stopped in time when the welding gun or fixture collides with the workpiece or tooling, so as to minimize damage to equipment.

· Flying Start



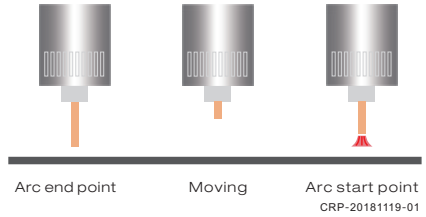
In the general process of arc starting, when the robot reaches the welding starting point (arc starting point), the robot will stop and issue the arc starting command. The wire feeding machine will send the wire forward slowly until the welding wire touches the base metal and successfully start the arc. But flying arc start refers to that before the robot reaches the welding starting point (arc starting point), the robot starts to execute the arc starting command in the running process and starts to feed the wire slowly. When the robot reaches the welding starting point, the welding wire touches the base metal and successfully start the arc. Thus shortening the welding time.

· Linear / Arc Coordination  
(COORD)



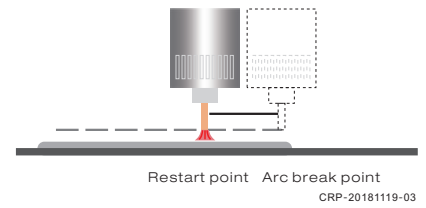
Linear Coordination: The external axis is a straight axis, which can be attached to any one or two directions coincident with the geodetic coordinates X, Y and Z of the robot, and together with the 6 axes of the body to form a 7 / 8 axis linkage to carry out interpolation motion. That is, in the process of motion of the external straight axis, the end of the robot can still maintain straight line or circular arc interpolation motion. Suitable for robot arm expansion is not enough but need continuous work applications. Such as: welding of super-large parts, super-long soldering seam, etc.

· Wire Back

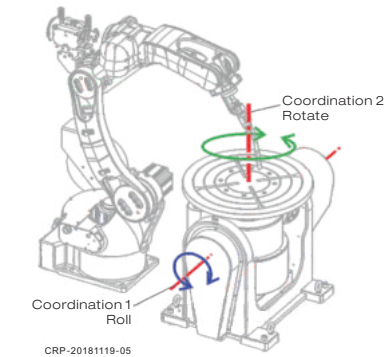


When this function is enabled, the welding wire will automatically retract when the robot is on the way to the next welding seam (idle walk) after the completion of welding of one welding seam, so as to avoid the occurrence of bending of welding wire caused by collision with workpiece or fixture, etc., then realize the successful arc starting of subsequent welding.

· Restart (Lap Welding)



When this function is enabled, if it needs to be re-welded, while arc breaking or welding suspension occurs during the welding process. The robot will automatically retreat a certain distance along the welding forward direction, and overlap with the previous arc stopping points to avoid bad results. This function is suitable for girth welding or welding of products with sealing requirements.



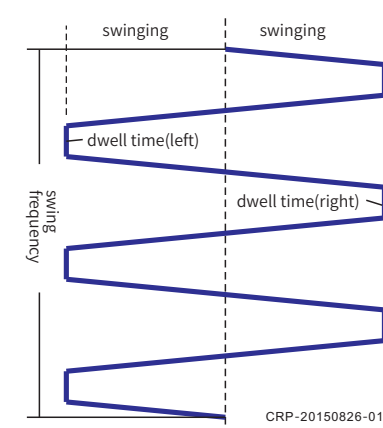
Rotating Coordination: The external axis is a rotating axis, which can be equipped with one or two additional rotating axes. The rotating axes can be turned and rotated, and 7/8 axes can be combined with the 6 axes of the body for interpolation. That is to say, the external rotating axis can still maintain linear or circular interpolation motion at the end of the robot. It is suitable for applications where robot gesture coverage is insufficient, but continuous operation is needed, such as intersecting line welding, whole gesture circular welding, etc.

# CRP ROBOT SYSTEM

## System function introduction (welding function)

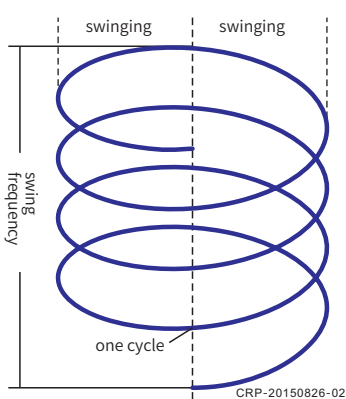
### · Swing Arc

Swing arc function is suitable for wide welding, groove filling, cover and other welding occasions



CRP-20150826-01

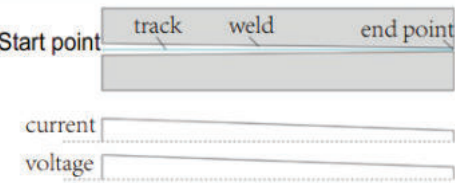
Z-shaped swing: The trajectory of the robot is shaped like the letter "Z", the direction of oscillation is perpendicular to the direction of advance, and the swing surface is perpendicular to the z-axis of the tool coordinate system



CRP-20150826-02

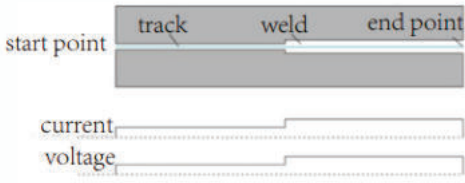
Circular arc: the robot's motion trajectory is like the spiral arc alternation. The swing direction is perpendicular to the forward direction, and the swing surface is perpendicular to the z-axis of the tool coordinate system.

### · Gradual change/Jump



```
1 MOVJ VJ=100, 0% PL=0
2 ARCSTART#(0) V= 20.00V I= 160.00A
3 MOVL VL=10.0MM/S PL=0 AOUT V=23.0 I=220.0
```

The gradual change function can be used in welding places that need gradual change of current and voltage. During the execution of welding operation, the welding machine current and voltage parameters can be controlled to gradually increase or decrease, and the gradual change process is linear. The whole position searching function is suitable for occasions where the workpiece is prone to whole offset, partial offset, etc.



```
1 MOVJ VJ=100, 0% PL=0
2 ARCSTART#(0) V= 20.00V I= 160.00A
3 MOVL VL=10.0MM/S PL=0
4 ARCSTART#(0) V= 23.00V I= 220.00A
5 MOVL VL=10.0MM/S PL=0
6 ARCEAD#(0)
```

The jump function can be used in complex welding, where different parameters need to be matched. During the execution of welding action, the current and voltage parameters of the welding machine can be controlled to jump up or down, and the jump process can be completed instantaneously.

### · Fish scale welding



CRP-20181117-02



CRP-20181117-03

Fish scale welding is also known as continuous spot welding, in the process of progress, continuous arc start, and then arc over, weld molding such as fish scale general effect. This function combination, can also achieve intermittent welding, reduce the programming workload. Mainly used in pipe fitting welding (beautiful appearance), thin plate welding (not too hot melt through the base material), or intermittent welding and other places.

### · Arc tracking

The robot system adopts the swing welding method, and collects the current fluctuation caused by the change of arc length in the welding process through the external arc sensor, so of the welding seam and track the deviation. Suitable for medium and thick plate welding and large welding location with deviation and other welding places.

Note: this function needs to cooperate with crp-caw-v1 arc tracker

### · Laser tracking

The robot system collects the welding seam position through the external laser tracking sensor, and then corrects the path and tracks the deviation in real time. It is suitable for welding occasions such as difficult positioning of tooling or inaccurate positioning, deformation of workpiece during welding and inaccurate incoming materials.

Note: this function needs to cooperate with CHUANGXIANG and JUNNUO laser tracker

### · Fixed-Point Laser tracking

Laser fixed point tracking is usually an application mode of laser tracking welding with the external axis. In the laser tracking process, the body position and posture remain basically unchanged, and the welding seam is moved by the rotation or translation of the external axis. The deviation in the laser search process is finally compensated to the welding track. Fixed point tracking is suitable for welding scenes such as large and small circles, multi-circles and long straight lines, and it can also solve the track error problem which is easy to occur in the process of large attitude change.

### · Multi-layer and multi-path

This is a welding method commonly used in the field of welding, the same weld or the same path for repeated stack welding, so as to meet the welding height and overall welding strength requirements. The multi-layer multi-path function only needs to teach the basic path once, and then design the stacking times and stacking rules of the welding path through the instruction. Greatly reduce the programming time, reduce the difficulty of programming. Multi-layer multi-channel is suitable for the need to use stacked welding. It is also suitable for other sports occasions that need to run similar trajectory, such as glue coating, spraying and other fields.



# CRP ROBOT SYSTEM

## System function introduction (painting, bending, palletizing)

### 2.Painting

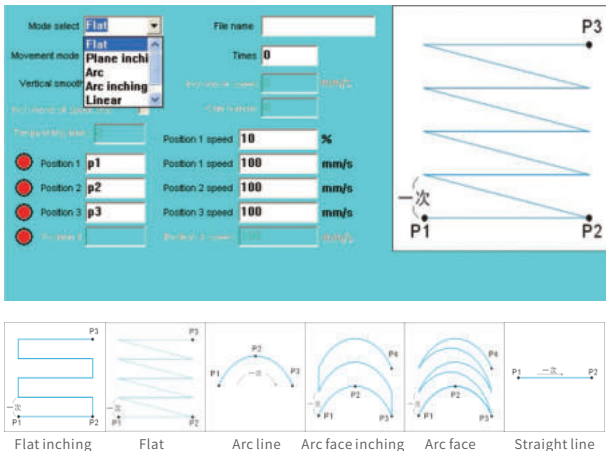
The system provides 4-way analog interface for painting. Built-in standard trace templet. Quickly generate the painting trace.Support user-defined painting trace. For details see CRP-S80 Painting Instructions.

#### ·Analog Interface

Four-way analog output, easy to control fan-shaped, atomization,flow, air pressure or other painting equipments



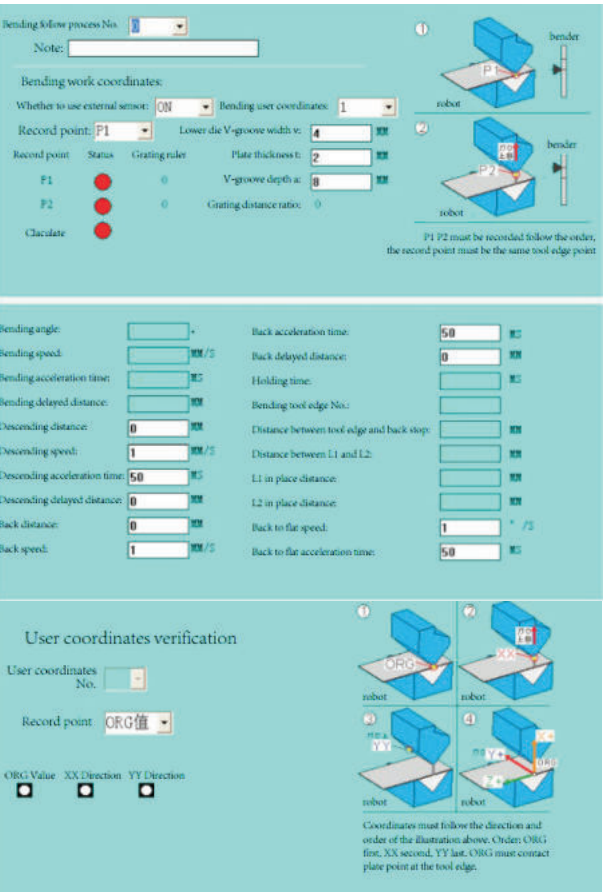
#### ·Trace Templet



### 3. Bending

The bending process is mainly applied to the loading and unloading of the bending industry, and the bending follows of the workpiece. Strong consistency with 24-hours work without interruption. Substitute manual work to realize unmanned and automation.It can realize constant speed tracking (old bending equipment),sensor (grating, encoder), real-time tracking (CNC bending machine).

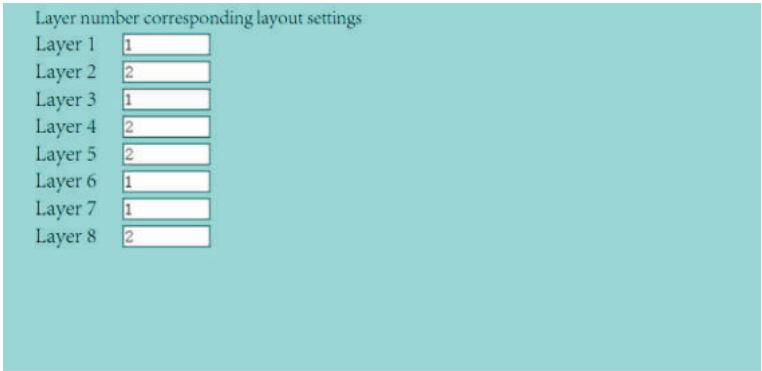
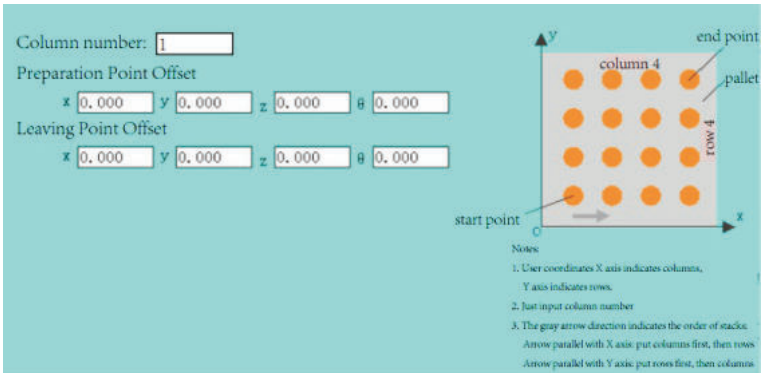
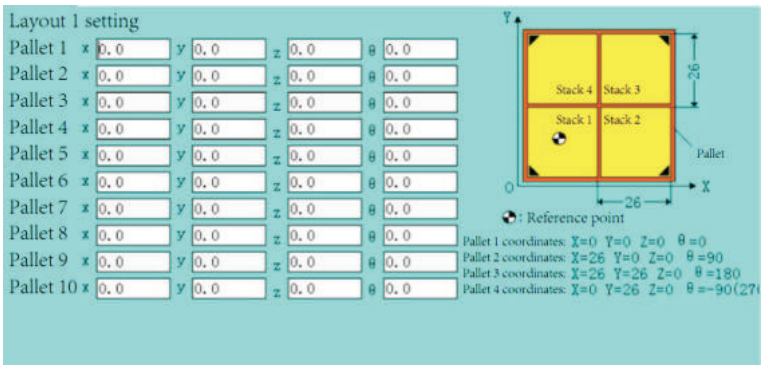
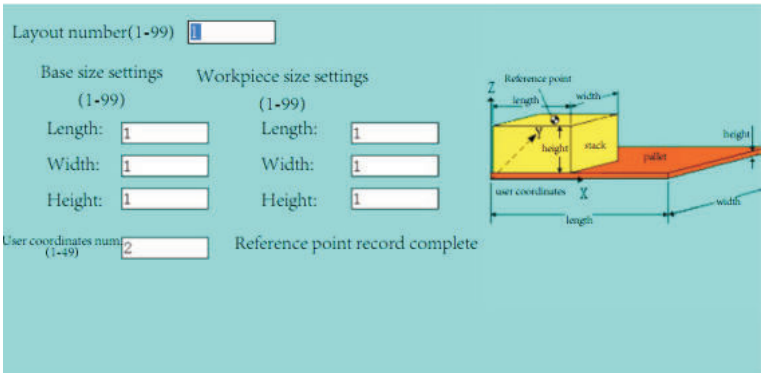
The system commands can realize bending follow and automatically back to flat function. For details see CRP Bending Process Instructions.



### 4.Palletizing

The palletizing process refers to the simple confirmation of the placement position of the crucible by setting the basic parameters of the outer dimensions, the number of pallets, and the number of layers. Palletizing and unpacking can be achieved with a simple palletizing command.

For details see CRP-S40, S80 Palletizing Process Instructions





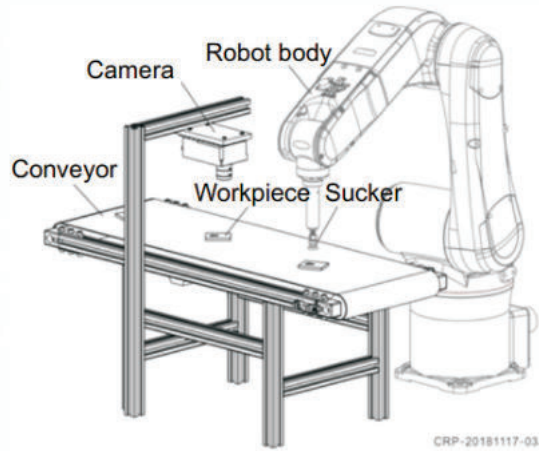
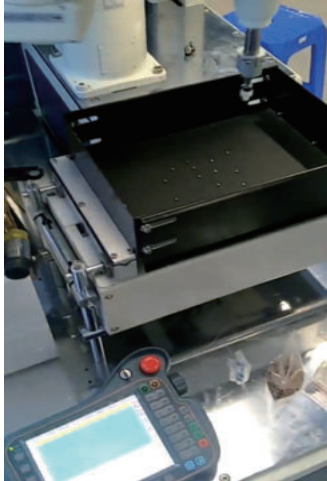
# CRP ROBOT SYSTEM

## System function introduction (vision, track, stamping)

### 5. Vision

#### · Plane Vision

Plane vision support multiple vision equipments and protocols(OMRON, Cognex, DALASA, etc). Three trigger mode: construction, timing, distance. Applied in conveyor sortation. It's with the application of one camera working with multiple robots. Camera can be fixed at the end of the robot body or other external devices, identifying,grabing, vision correction. See more details-CRP-S40, S80 Vision Fuction Brochure.



#### · 3D Vision

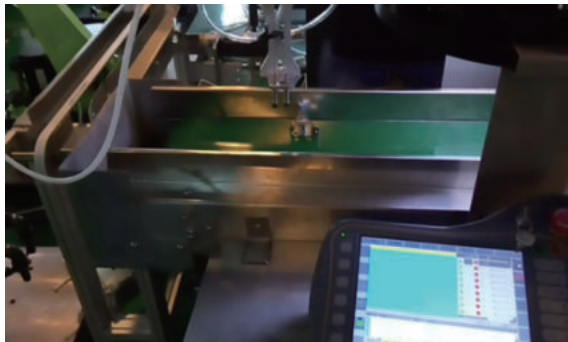
Through 3D laser skin on the scatterd objects, unordered parts, the robot system can form a 3D image of these parts, then calculate the posture and position of these skinned parts,sothe robot can conduct all-attitude capture operation.Unlike plane vision(2D), 3D vision can do height identification,ABC all-attitude identification, so it can applied in different height overlapping and unordered vision identification.



### 6.Tracking

Trcaking means the robot can grasp parts following the movement of the conveyor(point track) or the robot move following the movement of the conveyor(trace tracking, e.g. spraying, gluing)Tracking function can realize: current product single tracking(grasp,spraying), multiple tracking(assembling), queue tracking.Setting tracking detect point, start point, stop point, detect range according to different application. Flexible parameter setting, suits conveyor crawl.

More detail on CRP-S40, S80 Tracking Fuction Brochure.

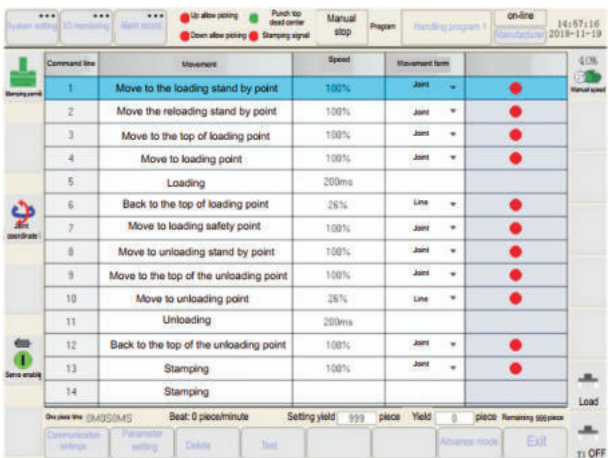
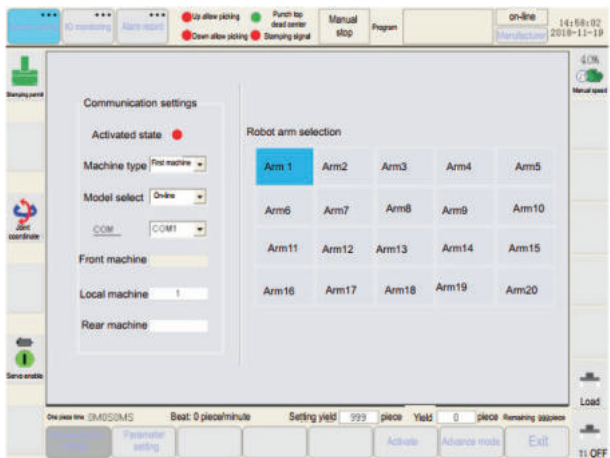
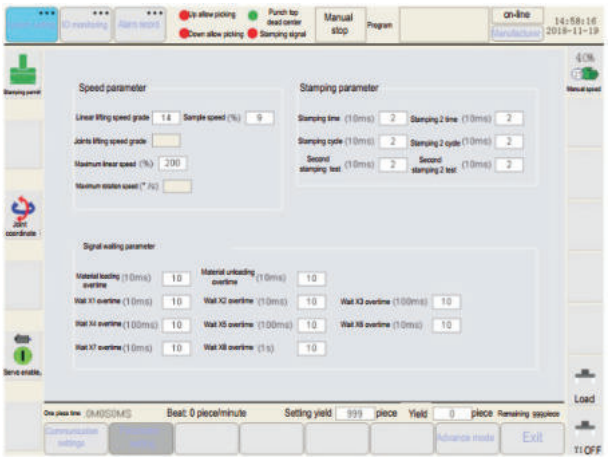


### 7. Stamping

Stamping process is based on CRP standard controller, including all controller fuctions. At the same time developed: stamping process, stamping interface, stamping cable and a whole set of solutions. Fast connection, easy to use, easy maintenance, adjusable beat.

#### Main feature:

1. Fast connection, bus communication, no complex I/O cable, low failure rate, easy maintenance.
2. Disconnection detection, robot will ring the alarm right after the disconnection, the automation line will wait till the alarm is cleared.
3. Based on the standard controller, all controller functions available.
4. Dedicated stamping interface, hide all the other information that is not ralated with stamping, clear interface.
5. Modularization programming, built-in standard stamping process, it only need record points to start, no complicated teaching line by line.
6. Built-in multi working program block, all you have to do is insert the program block. Can be applied in multi working scenario.
7. Authority management, right man to do the right thing.
8. No external master control needed, one-button enable, one-button start, one-button reset.
9. Built-in detection logic for each process, the robot system will ring the alarm right after something is wrong, easy maintenance and safer.
10. Physical emergency stop curcuit related to every safety switch, reliable and safe.
- 11.Directing display: working beat, workpiece count, remaining workpiece count, etc.
12. Parameter open, easy to adjust working speed and working beat.
13. Built-in sample run and no-load run, so it's convenient for debugging and testing.



# CRP ROBOT SYSTEM

## System function introduction

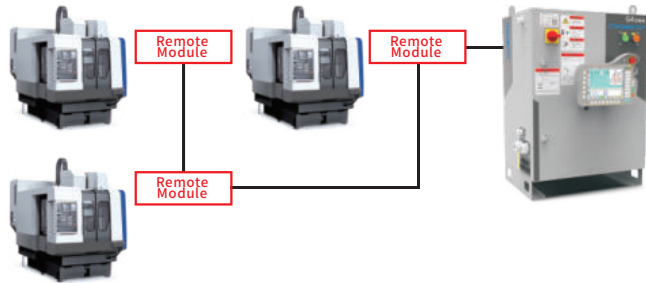
(Machine tool loading and unloading)

### 8. Machine tool loading and unloading

The machine tool loading and unloading process is a special process developed for CNC automatic processing machine tools based on the CRP standard controller. It can always meet the increasingly stringent machine tool production efficiency and processing quality. Meanwhile, it will make you quickly adapt to new technologies, improve traditional processes, shorten the construction period and promote the overall efficiency of man, machine, method, material and environment.

#### · Easy for installation

The remote module and one-stop communication service are used between the machine tool and the robot, changing the traditional complex wiring form and making the wire connection simple, fast and easy to maintain.



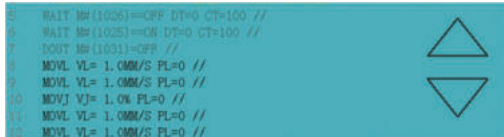
#### · Remote module

#### · Easy for commissioning

Fixed I/O definition and full Chinese/English annotation makes the interactive signal clear to understand.

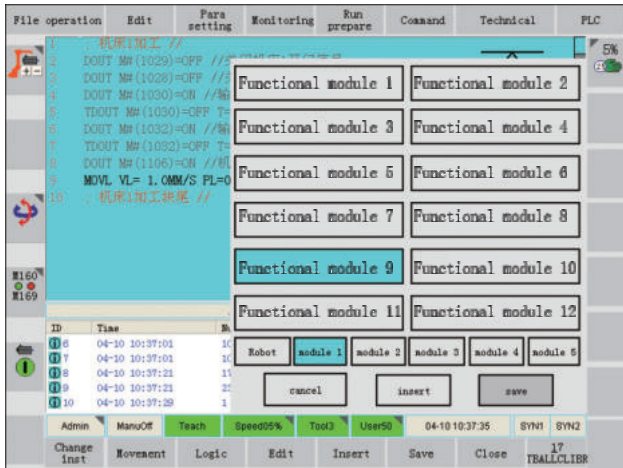
#### · Easy for maintenance

Based on standardized design, new technicians can operate easily and proficiently after the replacement of personnel, and the subsequent maintenance is simple.



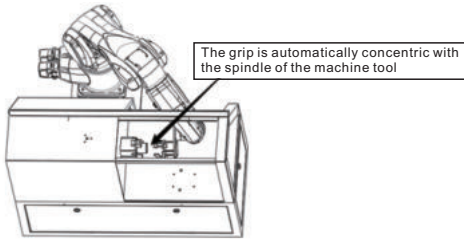
#### · Module programming, simple operation

The safety logic relationship is programmed into the function block in advance, and the on-site programming can be easily called, so that the programming is no longer complicated. CROBOTP robots come with Chinese safety logic function blocks when they leave the factory, and the operator can easily program after getting a system training, which ensures the production efficiency and upgrades the factory intelligence.



#### · One key concentric

The three-point method can easily find the coordinate system of the machine tool, and the gripper and machine tool spindle are automatically concentric through one-key operation, no need for traditional cumbersome commissioning.



#### · Single layer palletizing

Single-layer matrix palletizing technology means that 5 points simple setting is easy to calibrate the entire pallet coordinate, making de-stacking and stacking become no longer complicated.



#### · Automatic detection

precise detection of processed products one by one, real-time detection of deviations and timely corresponding processing, truly an unmanned automated factory. The accuracy automatic detection function of the processed products can accurately detect the processed products one by one, find the deviation in real time and do the corresponding correction in time, so as to truly achieve the unmanned automation factory

#### · Multi-scene application

It can carry out loading and unloading operations on injection molding machines, die-casting machines, CNC lathes, CNC milling machines, CNC machining centers, special machines and other equipments to improve production efficiency and ensure product quality.



Injection molding machine loading and unloading



CNC machine tool loading and unloading



Special machine loading and unloading

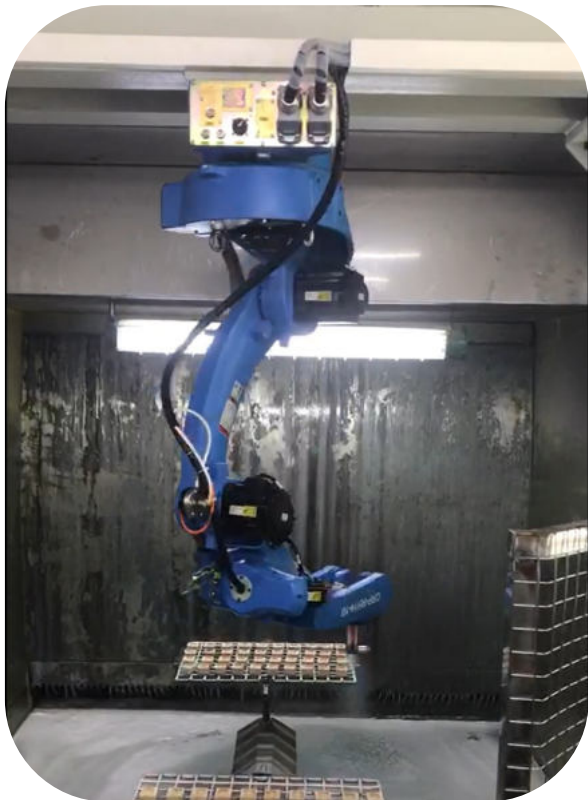


# APPLICATION CASES

## 1、Welding



## 2、Spraying



## 3、Cutting



## 4、Loading and Unloading

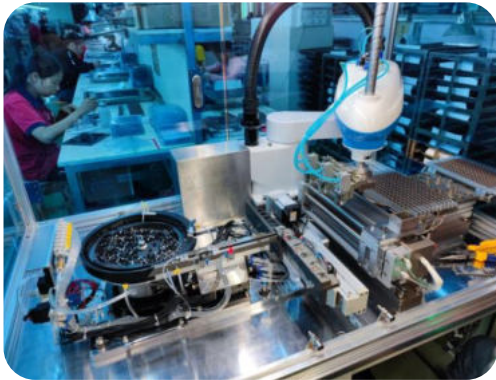




# APPLICATION CASES

## --Industry

### 1、3C Electronics Production



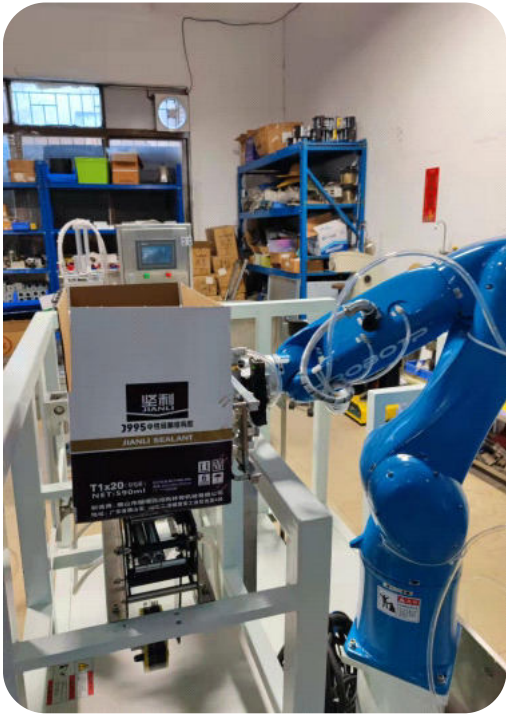
### 2、General Equipment Welding



### 3、Polishing Industry



### 4、Automatic Sealing



### 5、Automotive Industry

