

English



Rainbow Robotics  
Collaborative Robot

# RB Series



[www.rainbow-robotics.com](http://www.rainbow-robotics.com)

# We touch



## Rainbow Robotics

Rainbow Robotics, founded by researchers from KAIST Humanoid Robot Research Center (HUBO Lab), is a leader in robotic platforms. Our mission is to commercialize advanced robots through continuous research and development. We deliver cutting-edge technology at competitive prices.

\*KOSDAQ: Trading board of Korea Exchange (KRX) in South Korea established in 1996.

### Key Milestones

- Aug 2024** | Delivered quadruped prototype robot for counter-terrorism to the South Korean Army  
Developed South Korea's first Dual-Arm Mobile Manipulator, RB-Y1
- Jun 2024** | Launched autonomous mobile robot RBM Series
- Apr 2023** | Established a branch company in Schaumburg, Illinois, U.S.A
- Mar 2023** | Samsung Electronics acquired 4.77 percent of Rainbow Robotics
- Jan 2023** | Samsung Electronics acquired 10.22 percent of Rainbow Robotics
- Sep 2022** | Launched quadruped robot RBQ-10
- Mar 2021** | RB-N Series "NSF/ANSI 169" Certification
- Feb 2021** | Rainbow Robotics Inc. listed on KOSDAQ\* (277810)

# the core



- Aug 2020** | Delivered the LIG Nex1 internal gimbal driving assembly, and 1 other product
- Jul 2020** | Signed a service contract to design a satellite monitoring telescope system for the KASI
- Apr 2020** | “ISO 9001:2015” Certification
- Jul 2019** | **Launched RB Series (collaborative robot)**
- Feb 2018** | Operated of humanoid robot experience service during 2018 Pyeongchang Winter Olympic Games
- Jul 2017** | Secured 10 billion KRW in investment (venture capital)
- Feb 2016** | Supplied ‘Space Observation Mount System’ to LIG Nex1
- Dec 2015** | Exported four units of DRC-HUBO+ to the Naval Research Laboratory, USA
- Sep 2015** | Operated MOUNT, the electronic and optical space object monitoring system of the KASI
- Jun 2015** | **“DRC-Hubo” wins 2015 DARPA Robotics Challenge**
- Jan 2014** | “Venture Company” Certification
- Sep 2013** | Exported two HUBO II units to Google Inc., USA
- Dec 2011** | **Exported six HUBO (humanoid robot) units to the MIT with support from the US National Science Foundation**
- Jul 2011** | Mount technical service agreement signed with the Korea Astronomy and Space Science Institute (KASI)
- May 2011** | Established an affiliated research institute
- Feb 2011** | **Established Rainbow Robotics Inc. (Original company name: Rainbow Co., Ltd.)**

## Collaborative robots

# RB Series

Our RB series features 6-axis collaborative robot arms engineered with the expertise we've cultivated since the first generation of commercial robots. We offer six models with payload and reach ranging from 3-20 kg (6.6-44 lbs) and 730-1900 mm (29-75 in). All our cobots undergo rigorous testing and are certified by TÜV SÜD to meet global standards:

- ISO 13849-1, Cat.3, PL d
- ISO 10218-1
- ISO/TS 15066
- NSF/ANSI 169
- NRTL(UL 1740), CSA(Z434)



### RB Series Line

RB3-730

RB3-1200

RB5-850

RB10-1300

RB16-900

RB20-1900

+ RB6-920, RB6-1700 (To be released)

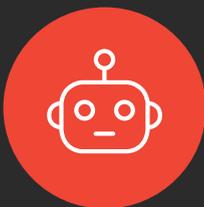
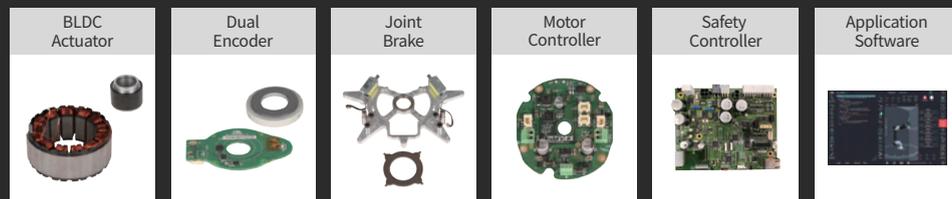
## Key Features



### In-House Components: Superior Performance, Competitive Pricing

Rainbow Robotics develops and uses core components required in its cobots, such as actuators, encoders, brakes, and controllers, in-house. With these components, RB series can deliver high driving speeds, precise controls, and braking performance without any play or instability in the braking system. Moreover, RB series is much more reasonably priced than the competition (30% cheaper) thanks to Rainbow Robotics' extensive use of in-house developed parts.

#### Key components of the collaborative robots developed by Rainbow Robotics



### Cobot Technology from Humanoid Robotics Experts

Rainbow Robotics is the pioneering company behind HUBO, an extraordinary bipedal robot renowned for its cutting-edge robotics technology. Leveraging its expertise in humanoid robotics, Rainbow Robotics has developed RB series, a dedicated line of cobots. Each cobot in RB series is equipped with advanced features, including a collision detection system, a gravity compensation device, and a sophisticated motor control system.



### Easy Software Interface

RB series is powered by a Linux-based, real-time robot operating system developed independently by Rainbow Robotics. The operating system uses a supervisory control algorithm to oversee and optimize the performance of each cobot. It supports the precise execution of tasks within a predictable time range.

This enables smooth movement and reduces the time required for each move or action. Additionally, Rainbow Robotics can address any issues with a software update if a cobot requires additional functions or upgrades to its system operations.

# RB3-730

RB3-730 is a compact, high-precision model with a payload capacity of 3 kg (6.6 lbs) and a maximum reach of 730 mm (28.7 inches). Featuring S-pipe joint arrangements, RB3-730 excels in executing contour motions frequently used in welding and bonding processes. Efficient motion can be created because the rotation axes of the three wrist joints pass through a single point. It is ideal for applications in IT, electronics, welding, and bio services.

Specification	
Payload	3 kg / 6.6 lbs
Reach	730 mm / 28.7 in
Repeatability	± 0.05 mm
Footprint	Ø 128 mm
Material	Aluminum, plastic, steel
Tool connector type	M8 8-pin connector 2ea (12/24V, ~2A) EN ISO 9409-1-50-4-M6
Cable length (Robot arm)	5 m / 196.8 in
Weight	11 kg / 24.3 lbs
Operating environment	IP54 / 0-50 °C
Wattage	100 W with the standard program
Noise	Less than 60dB(A)
Joint range & Max. speed	J1: ± 360°     ± 180°/s
	J2: ± 360°     ± 180°/s
	J3: ± 150°     ± 180°/s
	J4: ± 360°     ± 180°/s
	J5: ± 360°     ± 360°/s
	J6: ± 360°     ± 360°/s

※ Specifications may change to improve performance.



# RB3-1200

RB3-1200 has a 3 kg payload and a 1,200 mm range, offering the largest working radius among small-load cobots. It performs complex tasks like welding, grinding, and CNC machine tending, and can be used with an autonomous mobile robot (AMR).

Specification	
Payload	3 kg / 6.6 lbs
Reach	1200 mm / 47.2 in
Repeatability	± 0.05 mm
Footprint	Ø 173 mm
Material	Aluminum, plastic, steel
Tool connector type	M8 8-pin connector 2ea (12/24V, ~2A) EN ISO 9409-1-50-4-M6
Cable length (Robot arm)	5 m / 196.8 in
Weight	22.4 kg / 49.3 lbs
Operating environment	IP66 / 0-50 °C
Wattage	200 W with the standard program
Noise	Less than 65dB(A)
Joint range & Max. speed	J1: ± 360°     ± 180°/s
	J2: ± 360°     ± 180°/s
	J3: ± 165°     ± 180°/s
	J4: ± 360°     ± 180°/s
	J5: ± 360°     ± 180°/s
	J6: ± 360°     ± 180°/s

※ Specifications may change to improve performance.



# RB5-850

With a 5 kg load capacity and an 927.7 mm reach, RB5-850 is the standard model of RB series. It is suitable for manufacturing tasks like production, assembly, and fastening, as well as service tasks in food and beverage systems, disinfection/sanitizer systems, and robot studios.

Specification	
Payload	5 kg / 11 lbs
Reach	927.7 mm / 36.5 in
Repeatability	± 0.05 mm
Footprint	Ø 173 mm
Material	Aluminum, plastic, steel
Tool connector type	M8 8-pin connector 2ea (12/24V, ~2A) EN ISO 9409-1-50-4-M6
Cable length (Robot arm)	5 m / 196.8 in
Weight	22 kg / 48.5 lbs
Operating environment	IP66 / 0-50 °C
Wattage	200 W with the standard program
Noise	Less than 65dB(A)
Joint range & Max. speed	J1: ± 360°    ± 180°/s
	J2: ± 360°    ± 180°/s
	J3: ± 165°    ± 180°/s
	J4: ± 360°    ± 180°/s
	J5: ± 360°    ± 180°/s
	J6: ± 360°    ± 180°/s

※ Specifications may change to improve performance.



# RB10-1300

With a 10 kg payload and a maximum reach of 1,300 mm, RB10-1300 is effective for tasks involving heavier objects such as packaging, CNC loading, and pallet loading.

Specification	
Payload	10 kg / 22 lbs
Reach	1300 mm / 51.2 in
Repeatability	± 0.05 mm
Footprint	Ø 196 mm
Material	Aluminum, plastic, steel
Tool connector type	M8 8-pin connector 2ea (12/24V, ~2A) EN ISO 9409-1-50-4-M6
Cable length (Robot arm)	5 m / 196.8 in
Weight	37.1 kg / 81.8 lbs
Operating environment	IP66 / 0-50 °C
Wattage	350 W with the standard program
Noise	Less than 65dB(A)
Joint range & Max. speed	J1: ± 360°    ± 120°/s
	J2: ± 360°    ± 120°/s
	J3: ± 165°    ± 180°/s
	J4: ± 360°    ± 180°/s
	J5: ± 360°    ± 180°/s
	J6: ± 360°    ± 180°/s

※ Specifications may change to improve performance.



# RB16-900

With a 16 kg payload and a 900 mm reach, RB16-900 is a great option for handling heavy objects in tight spaces like packaging and CNC loading.

Specification	
Payload	16 kg / 35.3 lbs
Reach	900 mm / 35.4 in
Repeatability	± 0.05 mm
Footprint	Ø 196 mm
Material	Aluminum, plastic, steel
Tool connector type	M8 8-pin connector 2ea (12/24V, ~2A) EN ISO 9409-1-50-4-M6
Cable length (Robot arm)	5 m / 196.8 in
Weight	34.1 kg / 75.2 lbs
Operating environment	IP66 / 0-50 °C
Wattage	350 W with the standard program
Noise	Less than 65dB(A)
Joint range & Max. speed	J1: ± 360°      ± 120°/s
	J2: ± 360°      ± 120°/s
	J3: ± 165°      ± 180°/s
	J4: ± 360°      ± 180°/s
	J5: ± 360°      ± 180°/s
	J6: ± 360°      ± 180°/s

※ Specifications may change to improve performance.



# RB20-1900

With a 20 kg payload and a 1,900 mm reach, RB20-1900 handles the heaviest loads in RB series. It is effective for packaging and palletizing. Thanks to its sufficient power capacity, RB20-1900 can be installed in any orientation, including on the floor or on a wall.

Specification	
Payload	20 kg / 44 lbs
Reach	1900 mm / 74.8 in
Repeatability	± 0.05 mm
Footprint	Ø 245 mm
Material	Aluminum, plastic, steel
Tool connector type	M8 8-pin connector 2ea (12/24V, ~2A) EN ISO 9409-1-80-6-M8
Cable length (Robot arm)	5 m / 196.8 in
Weight	75 kg / 165.3 lbs
Operating environment	IP66 / 0-50 °C
Wattage	500 W with the standard program
Noise	Less than 65dB(A)
Joint range & Max. speed	J1: ± 360°      ± 120°/s
	J2: ± 360°      ± 120°/s
	J3: ± 150°      ± 120°/s
	J4: ± 360°      ± 180°/s
	J5: ± 360°      ± 180°/s
	J6: ± 360°      ± 180°/s

※ Specifications may change to improve performance.



To be released

## RB6-920



Specification	
Payload	6 kg / 13.2 lbs
Reach	920 mm / 36.2 in
Repeatability	± 0.05 mm
Footprint	Ø 173 mm
Material	Aluminum, plastic, steel
Tool connector type	M8 8-pin connector 2ea (12/24V, ~2A) EN ISO 9409-1-50-4-M6
Cable length (Robot arm)	5 m / 196.8 in
Weight	21 kg / 46.3 lbs
Operating environment	IP66 / 0-50 °C
Wattage	200 W with the standard program
Noise	Less than 65dB(A)
Joint range & Max. speed	J1 : ± 360° ± 180°/s
	J2 : ± 360° ± 180°/s
	J3 : ± 160° ± 180°/s
	J4 : ± 360° ± 180°/s
	J5 : ± 360° ± 180°/s
	J6 : ± 360° ± 180°/s

※ Specifications may change to improve performance.

To be released

## RB6-1700

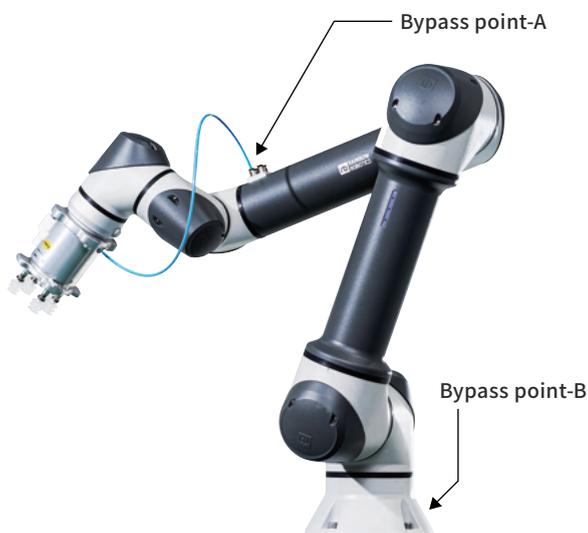


Specification	
Payload	6 kg / 13.2 lbs
Reach	1700 mm / 66.9 in
Repeatability	± 0.05 mm
Footprint	Ø 196 mm
Material	Aluminum, plastic, steel
Tool connector type	M8 8-pin connector 2ea (12/24V, ~2A) EN ISO 9409-1-50-4-M6
Cable length (Robot arm)	5 m / 196.8 in
Weight	39 kg / 86 lbs
Operating environment	IP66 / 0-50 °C
Wattage	350 W with the standard program
Noise	Less than 65dB(A)
Joint range & Max. speed	J1 : ± 360° ± 120°/s
	J2 : ± 360° ± 120°/s
	J3 : ± 160° ± 180°/s
	J4 : ± 360° ± 180°/s
	J5 : ± 360° ± 180°/s
	J6 : ± 360° ± 180°/s

※ Specifications may change to improve performance.

## Built-in pneumatic option (A1, A2, A3)

We offer an optional built-in pneumatic line, unique in the market. This feature simplifies cable management and is compatible with all RB series products. Users can choose from A1, A2, or A3 configurations. Be advised to check the driving range and operating environment when applying this option.



Model Name	Pneumatics lines	Signal lines
RB5-850A1	4 EA(Ø 4 mm tube)	N
RB5-850A2	5 EA(Ø 4 mm tube)	12 Pin(AWG28)
RB3-1200A1	4 EA(Ø 4 mm tube)	N
RB3-1200A2	5 EA(Ø 4 mm tube)	12 Pin(AWG28)
RB10-1300A1	1 EA(Ø 8 mm tube)	N
RB10-1300A2	1 EA(Ø 8 mm tube)	12 Pin(AWG28)
RB10-1300A3	4 EA(Ø 4 mm tube)	N

※ Specifications may change to improve performance.

# Robot Control Box

Robot control box manages arm movements based on user programs. It has digital and analog input/output ports and various industrial communication features for connecting various devices.

## Standard Control Box (CB06)



Specification	
I/O ports	Digital input 16 (PNP)
	Digital output 16 (PNP)
	Analog input 4 (0-10V)
	Analog output 4 (0-10V)
	USB (4 ports), LAN (RJ45 1 port)
	Ethernet (TCP/IP, MODBUS TCP, Control Script) Siemens S7, OMRON Fins, Mitsubishi MC, EtherNet/IP, ProfiNet, OPC-UA, etc ※ I/O expansion modules available
Power source	100-240V AC, 50-60 Hz Single Phase
Dimension	443x260x371 mm / 17.4x10.2x14.6 in : Main body
	443x260x411 mm / 17.4x10.2x16.2 in : Handle included
Weight	15 kg / 33 lbs
Material	Electro galvanized (EG) steel
Certified / Suitable model	All models

## Small Control Box (CB07)



Specification	
I/O ports	Digital input 16 (PNP)
	Digital output 16 (PNP)
	Analog input 4 (0-10V)
	Analog output 4 (0-10V)
	USB (4 ports), LAN (RJ45 1 port)
	Ethernet (TCP/IP, MODBUS TCP, Control Script) Siemens S7, OMRON Fins, Mitsubishi MC, EtherNet/IP, ProfiNet, OPC-UA, etc ※ I/O expansion modules available
Power source	100-240V AC, 50-60 Hz Single Phase
Dimension	420x232x173.5 mm / 16.5x9.1x6.8 in : Main body
	460x232x173.5 mm / 18.1x9.1x6.8 in : Handle included
Weight	8.3 kg / 18.3 lbs
Material	SUS 304
Certified model	RB3-730, RB6-920
Suitable model	All models

## DC Control Box (CB09)



Specification	
I/O ports	Digital input 16 (PNP)
	Digital output 16 (PNP)
	Analog input 4 (0-10V)
	Analog output 4 (0-10V)
	USB (4 ports), LAN (RJ45 1 port)
	Ethernet (TCP/IP, MODBUS TCP, Control Script) Siemens S7, OMRON Fins, Mitsubishi MC, EtherNet/IP, ProfiNet, OPC-UA, etc ※ I/O expansion modules available
Power source	48VDC (36~72VDC)
Dimension	420x232x173.5 mm / 16.5x9.1x6.8 in : Main body
	470x232x173.5 mm / 18.5x9.1x6.8 in : Handle included
Weight	7.8 kg / 17.2 lbs
Material	SUS 304
Certified model	N/A
Suitable model	All models

※ Specifications may change to improve performance.

# Why RB Series?

## Robust Aluminum Construction

Our cobots' aluminum bodies are ideal for polishing, processing, and welding. With the durable and light hardware, robot can perform reliably in tough manufacturing environments.



## Industry-leading IP Rating

RB Series Cobots offer best-in-class IP ratings (IP66). Cobots can take on more diverse roles at CNC machining sites, food and beverage sites, etc.



## Safety System

Safety is one of the main reasons for using collaborative robots. RB Series collaborative robots ensure the safety of users and robots through four key features.

- External force collision detection
- Vibration detection
- Self-collision prevention
- Safe plane and range settings



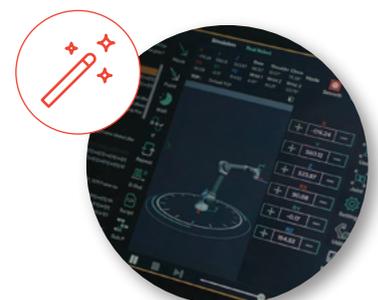
## Certified & Tested

Our cobots are verified by TÜV SÜD for its safety and performance reliability. They meet global safety standards and are trusted by users worldwide.



## Versatile built-in Features

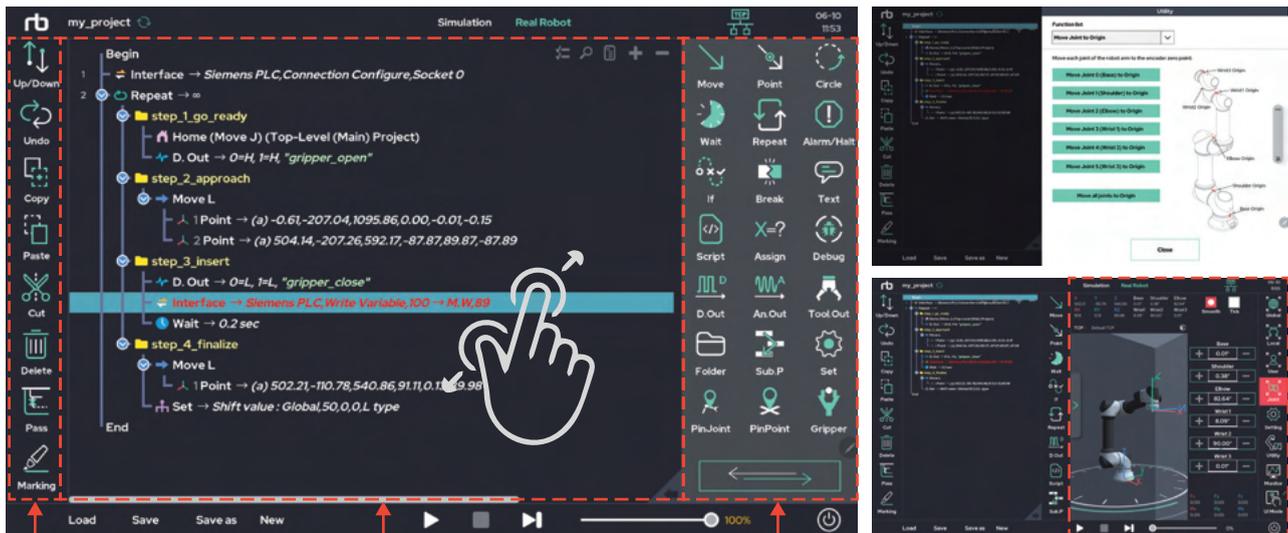
RB Series offers numerous built-in features. Immediately deploy RB Cobot into various applications without additional programming or costs.



# Convenient Program View

Rainbow Robotics provides an intuitive and progressive proprietary UI. Deploy your automation project with just a few clicks through the touch screen / monitor. Convenient program creation increases your productivity and reduces the time and cost required for program management.

By utilizing industry-leading built-in functions, RB series robots can be quickly deployed into automation sites without additional costs.



Editors

Program tree view

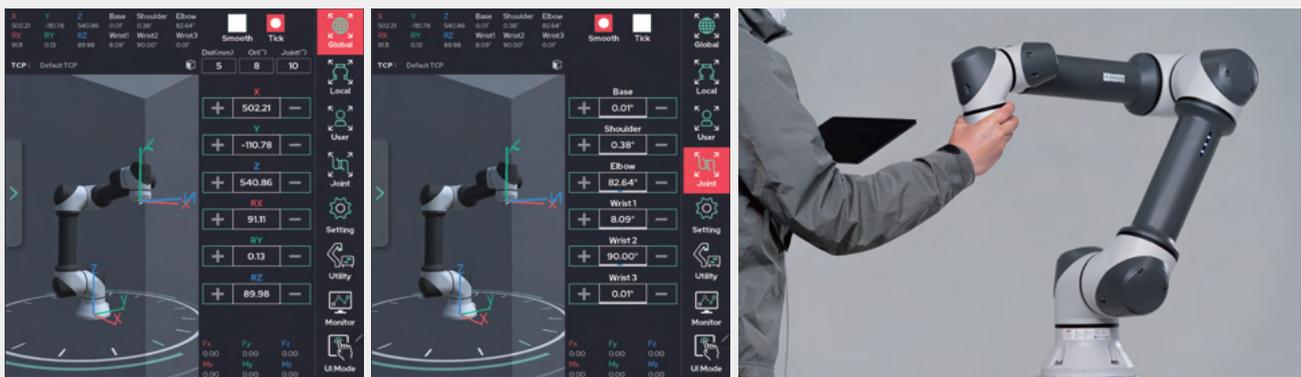
Function/Actions

JOG

# Versatile Jog

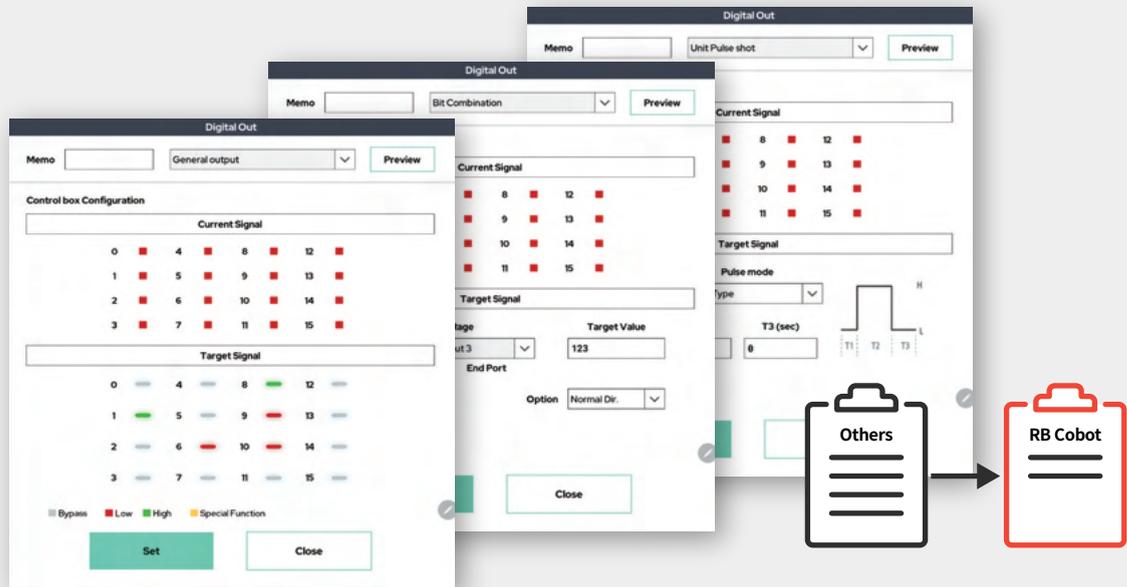
User can manipulate the robot arm based on various coordinate systems. Robot moves based on the coordinate system selected by the user. By using Tick Mode, user can adjust the interval as desired. User can also operate the robot using the Hand-Guiding (Free-Drive) function through the button attached to the end of the robot.

Experience advanced hand-guiding function that moves the robot arm by constraining specific plane or direction.



# Easy I/O Management

RB Series provide a variety of options for controlling the most frequently used input/output signals in the field. It provides various options such as simple output, pulse output, bit combination output, and delayed output, allowing you to control signals without separate coding.

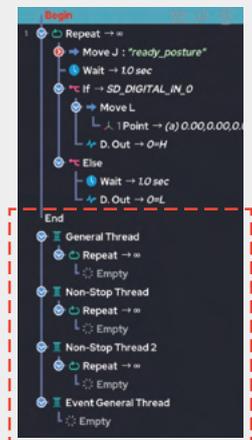


# Mutli-Processing

To cope with various automation sites, one main program pipeline and four parallel pipelines are provided. In addition, it provides a program management tools such as [SubProgram], [ProgramConvert], [Template], allowing you to manage projects efficiently and safely.

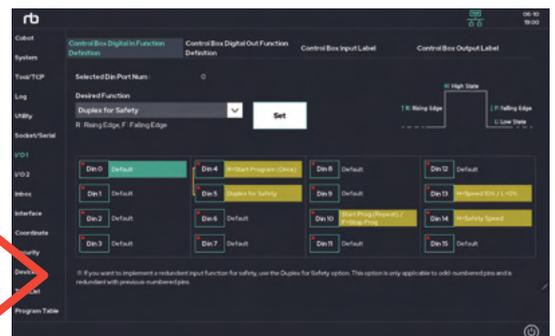
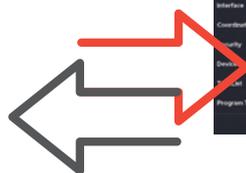


- Thread
- Event Thread
- Sub Program
- Template
- Program Conversion



# Configurable System I/O

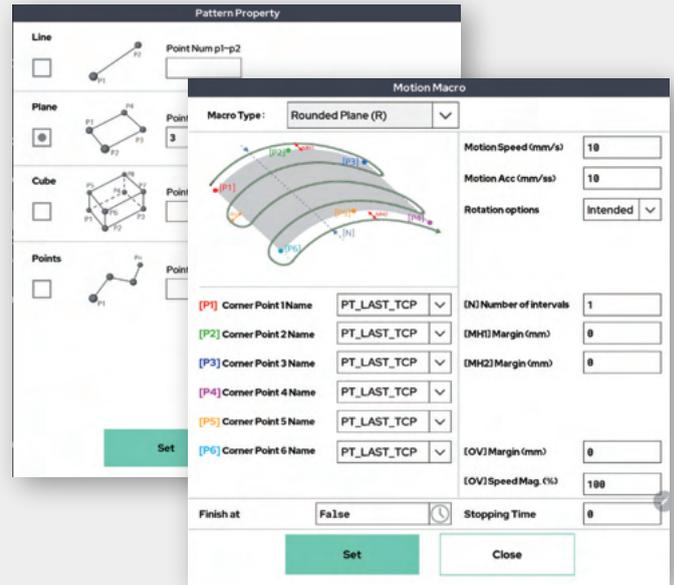
To ensure a smooth system configuration with PLC and peripheral devices, there are over 100 various system management I/O functions. Designated functions are performed and managed in the background without separate programming.



# Polishing & Grinding

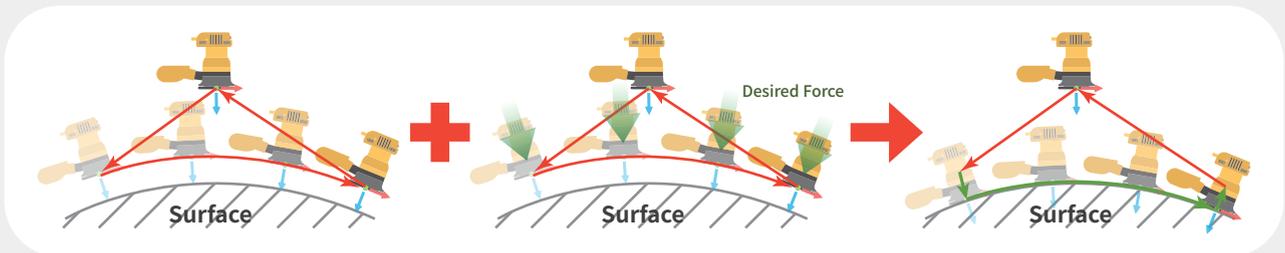
Users are free from harsh polishing/painting environments. Using Rainbow's features, you can easily implement repeated actions. We provide the best solution for creating repetitive and patterned robot trajectories such as polishing/painting.

By using functions such as [Motion macros] and [Pattern], users are free from repeated robot teaching. Even if the object changes, user can respond quickly by just changing few landmark points. Don't waste any more time teaching repetitive movements.



# Intelligent Force control

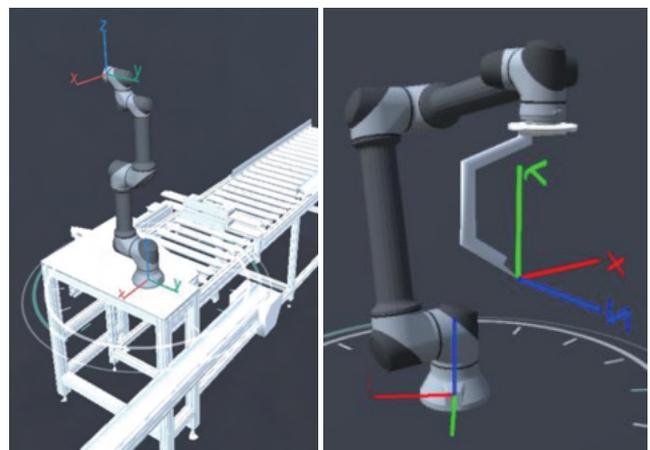
Rainbow Robotics' collaborative robots feature a built-in force control function. User can easily implement force control by connecting them to various Force/Torque sensors (Hardware is add-on option). RB cobots are capable of performing surface treatments such as grinding and polishing with constant force.



# Easy 3D Modeling Simulation

Users can load a 3D modeling file designed for the project environment into the UI and virtually review the robot's path and workability.

In addition, Rainbow Robotics also supports Third Party OLPs, such as RoboDK, Visual Components, Octopuz, ROS.



# Teaching Pendant

Rainbow Robotics' cobots are easy to program using the Rainbow Robotics Teaching Pendant. Moreover, the icon-based GUI allows users to configure the interface to suit their required conditions. The user-friendly GUI also makes maintenance easier, improves security, and enables intuitive programming. Teaching Pendant is compatible with Android OS-based smartphones, tablet PCs, and Windows OS-based devices.



## ◆ Main Features



### User's Convenience

Rainbow Robotics' Teaching Pendant is a lightweight, highly responsive product, and it can be connected via wired or wireless options. Also, a single Teaching Pendant can control multiple robots.



### Program Configuration

Users can confirm and load previously created programs through the SubProgram and Template functions. When a program is loaded, it is automatically grouped, allowing users to easily view the full overview.



### Jog-based Interface

When writing a program, a robot often has to be repositioned or relocated. The RB series cobots have a jog dial located next to the programming window. Users can use the jog dial to move the robot and add the desired commands.



### Flexible Digital Output

Users can control the entire port by selecting either ON or OFF. Furthermore, various options such as a bit combination output and pulse output are available for digital output.



### Organized Program Management

Users can access the program summary through the program tree, and functions such as zoom/scroll can help view the content with greater accuracy.

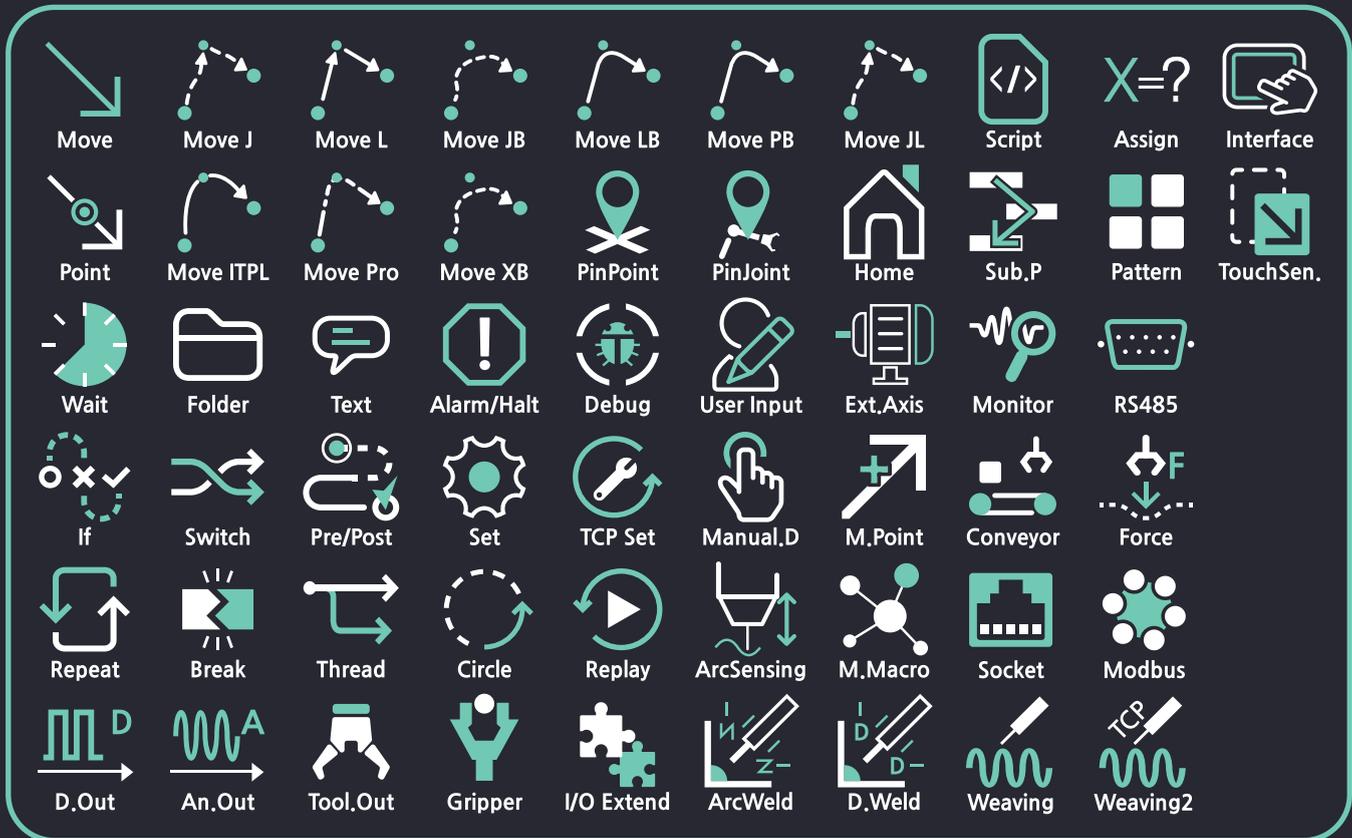


### Real-time Monitoring

Teaching Pendant features debugging and monitoring functions to check the value of selected variables. While the program is running, users can view the selected variable via a pop-up and monitor variables in real-time.

# Built-In Functionality

Rainbow Robotics' RB Series has various built-in functions for users. Experience a variety of motion creation functions, communication functions, and program management functions without installation and extra cost.



**Robot Arm Movement**  
Move J, Move L, Move JB, Move LB, Move PB, Move JL, Move ITPL, Move Pro, Move XB, Circle, Home

**Program Logic Flow**  
Wait, if/else, Repeat, Break, Continue, Switch, Halt, Jump, Pre-Program, Post-Program, Thread, Sub-Program, Convert

**User Programming**  
Assign, Script, Debug, Monitoring, Memo, Alarm, User Input, User Log, Folder

**Advanced Motion Generation**  
Pattern, Weaving, TCP-Weaving, Conveyor, Force-Control, Motion Macro, RePlay, G-Code, Pin-Point, Pin-Joint

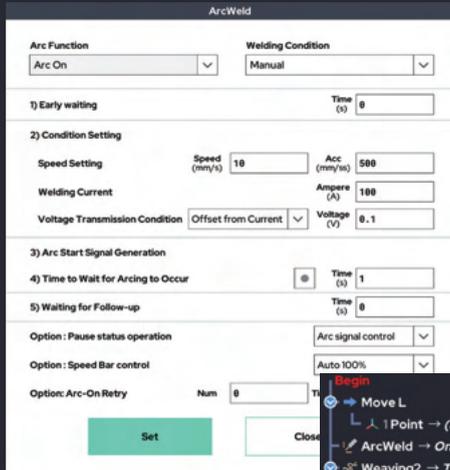
**Welding Application**  
ArcWelder On/Off, Digital Welder On/Off, ArcSensing, TouchSensing

**I/O Control Function**  
Digital Out, Analog Out, Extention I/O Control, Tool-Flange Out, Gripper

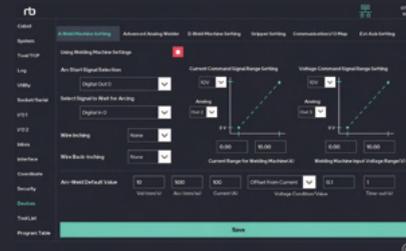
**Communication**  
Interface, TCP/IP Socket, Serial, Modbus, EtherNet/IP, ProfiNet, OPC-UA

**Others**  
Set, TCP-Set, Manual Driving, External Axis

# Start your Welding with single line

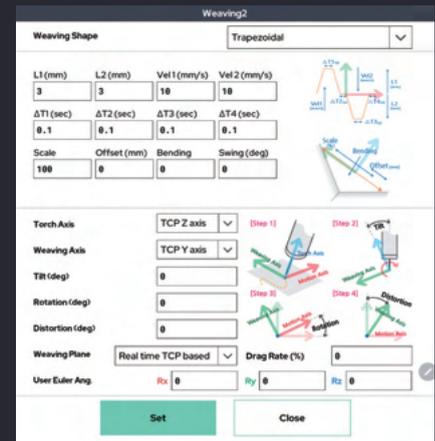
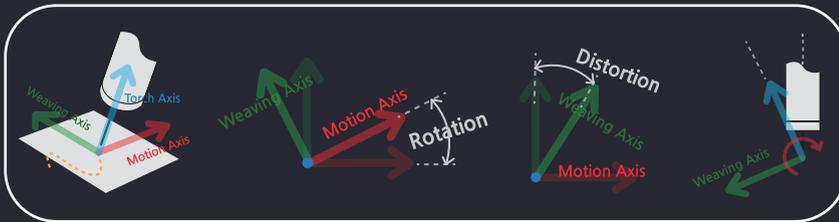


Collaborative robot welding is growing. To implement welding, users only need to use a single On/Off command. When you enter the desired welding conditions (current/voltage/speed), RB Cobot takes care of the necessary calculations and communication. Don't waste any more time for programming. Various welding machines are also linked. Most welders with an analog interface (Miller, Fronius, Daihen, Megmeet, etc) as well as welders with a digital communication interface (ESAB, Kemppi, KOLARC, Hyundai, etc) can be used immediately with just one line. Rainbow collaborative robots are used in various welding fields such as MIG/TIG/Laser.

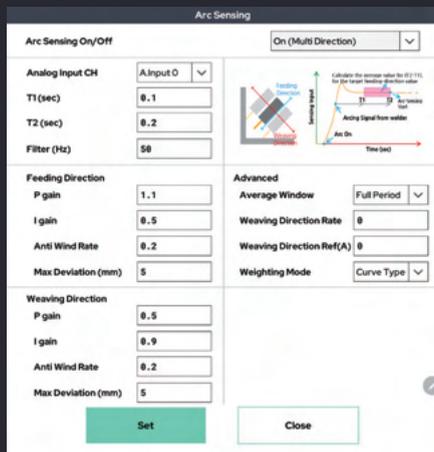


# Various Weaving Profiles

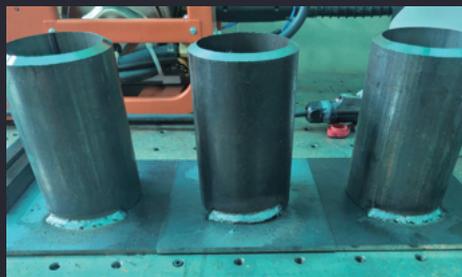
Weaving action cannot be omitted in welding. In our RB UI, various weaving shapes (profiles) are built-in. Built-in trapezoidal, triangle wave, sine wave, square wave, wave pattern, circular shape, etc. Users can easily implement weaving welding by entering the desired type and parameters. No more wasting time programming to implement weaving.



# Built-In Arc-Sensing



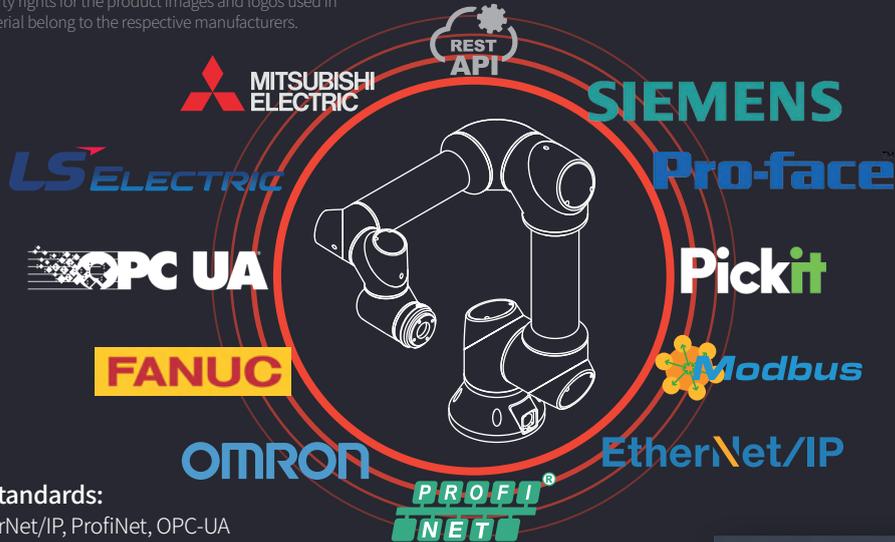
RB Series has built-in sim tracking functionality through arc sensing (current sensing). Through this function, robot can automatically track the center line of the weld while weaving and automatically adjust the height of the wire. It can be applied in a variety of ways, such as MIG/TIG welding.



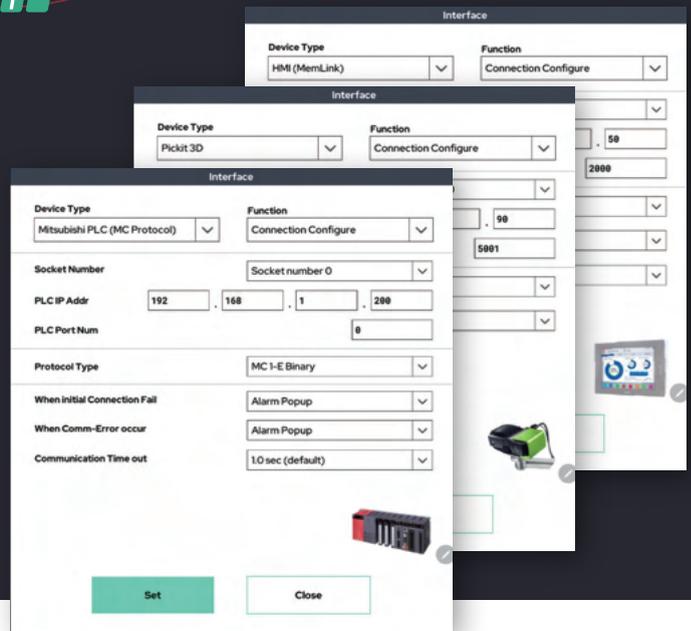
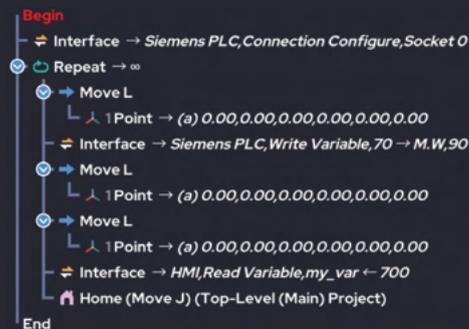
# Infinite Connectivity

Communication with various equipment is required in automation sites. Using Rainbow collaborative robots, you can easily communicate with various parallels such as PLC, HMI, and sensors.

\* The intellectual property rights for the product images and logos used in this promotional material belong to the respective manufacturers.



- **International standards:**  
ModbusTCP, EtherNet/IP, ProfiNet, OPC-UA
- **Manufacturer designated:**  
FINS (OMRON), S7 (Siemens), MC (Mitsubishi), XGT (LS), MemoryLink (Proface HMI), Focas (FANUC)
- **General:**  
TCP/IP Socket, RS232/485



## Customizable Hand Controller

RB Series collaborative robots come with a hand controller. User can use it by setting the desired function to the function keys of the hand controller.

Increase the usability of the collaborative robot through the buttons on the hand controller without making separate buttons.



# Achieve your automation without PLC

RB Series provides various features and functions for automation without PLC. Implement simple and light automation using only RB Cobot.

- Software PLC**  
A simple PLC ladder can be implemented in the robot control box. You can process various input/output signals and communication signals through Software PLC Ladder.
- HMI Communication**  
MemoryLink communication is available for HMI devices such as ProFace and M2I. Connect the customer's preferred HMI directly to the robot.
- I/O Extention**  
There is a dedicated I/O expansion module, so you can increase the number of I/O through plug and play.
- AC ServoMotor Control**  
AC Servo Motor can be controlled by a robot without a PLC. Immediately implement horizontal rails, vertical elevators, etc.
- FANUC Communication**  
Supports digital communication to exchange data with FANUC CNC machines. You can easily configure CNC automation equipment.
- Customizable Hand Controller Buttons**  
You can assign functions you want to the buttons on the hand controller provided by the RB Series. Perform simple tasks without the need for additional button creation.
- DataBase**  
It has its own built-in database system, so it can store various data.



Reduce Implementation Costs



Increase Maintenance Efficiency



Shorten ROI time



## Plug N Play I/O Extension Module

RB series has a total of 40 I/O ports (default configuration). If more I/O ports are required, with RB's I/O extension module, users can add ports without using additional equipment, such as a PLC.

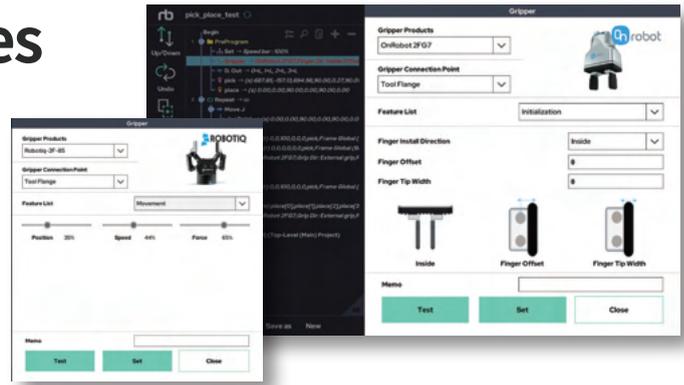


Specification	
I/O ports	Digital input 16 (PNP)
	Digital output 16 (PNP)
	Analog input 4 (0-10V)
	Analog output 4 (0-10V)
Power source	100-240V AC, 50-60 Hz
Size	403 x 313 x 110mm
Weight	500g
Materials	Aluminum

※ Specifications may change to improve performance.

# Plug-N-Play Accessories

RB series cobots support “Plug&Play” for easier integration of a variety of peripherals. The streamlined approach accelerates the development process of versatile solutions that are compatible with diverse working conditions.



				
Robotiq Hand-E	JRT JEGB 485/4140	HIWIN SEG-24-TM	MITSUBISHI PLC Series	AIDIN F/T Sensor
				
Robotiq 2F-85/140	DH-AG-95	HIWIN SEG-04-TM	LS ELECTRIC PLC Series	RS Automation
				
Robotiq E-Pick	Schunk Co-act	Robotiq F/T Sensor	ESAB Digital Welder	Baumer Laser
				
Robotis RHP12RN	Schunk EGP	Robotis F/T Sensor	HMI	SQLite DB
				
OnRobot 2FG7	OMRON PLC	Pickit 3D	Siemens PLC	SMC Gripper
				
OnRobot RG2/RG6	OTC Daihen Analog Welder	Setech NutRunner	SCHMALZ	Zimmer Gripper



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Megmeet Digital Welder



Keyence PLC



OMRON Vision



Miller Analog Welder



KORAS Gripper



OnRobot 3FG15



Hyundai Analog Welder



Kemppi Digital Welder



OnRobot MG10



Desoutter Drill



OnRobot F/T Sensor



JRT JEGC / JEGG



OnRobot Soft Gripper



OMRON LD Series



Tesollo Gripper



OnRobot VG10/VGC10



Fronius Analog Welder



Allen Bradley PLC



Megmeet Analog Welder



SeeNGrip



JASIC Laser Welder



OnRobot Eye



Hyundai Digital Welder



Gimatic Grippers



Cognex Vision



Logitech Joystick



Hyosung Analog Welder



OnRobot Sander



Kolarc Digital Welder

and More

# How RB Cobots Drove Innovations in Manufacturing and Hospitality Industry

## 1 CNC machine tending

CNC machine tending involves the repetitive process of loading raw materials into a machining tool and retrieving the finished product. The RB series cobots handle these simple and repetitive tasks on behalf of human workers and mitigate the risk of industrial accidents. Additionally, RB series is IP66-rated, making it resistant to dust and water. This allows the robots to continue working seamlessly, even in contact with cutting oil and coolant during machining.



**STS PRECISION  
CO., LTD**

“RB series cobot transformed our manual CNC process, boosting productivity by 40% to 50%. We now meet doubled or tripled customer demands driven by the semiconductor boom. It's been a game-changer, revolutionizing our operations for success in the industry.”

## 2 Welding solutions

The RB series comes equipped with essential functions for weaving and arc welding, making it highly versatile for a range of welding applications. These include specimen welding, argon welding, weaving welding, pulse welding, arc welding, and corner welding.



**Clmind**

“Welding demands precision and attention to detail. Unlike regular industrial robots, RB series cobot simplifies the process with its direct teaching function, making inputting robot motions and points a breeze. It's like having a helpful assistant that enhances efficiency and accuracy.”



**JCT**

“We are a small manufacturing company that specializes in custom-made metal products. We found this cobot welding system ideal for our small-lot productions. It's easy to install, requires no additional devices, and doesn't need a fence around it, so it's space-efficient, too. It truly is a great option for businesses that are struggling to find skilled welders. Even novice robot operators can use cobot welding systems with ease. We are very happy with the cobot welding system and would recommend it to other businesses.”



### 3 Mold handling

RB series cobot improves safety and productivity in mold handling in injection molding machines. It ensures that parts are handled consistently and that they are not damaged during the transfer. It can also perform dangerous tasks that would otherwise require operators to put their hands into the injection molding machine to remove newly produced components.



TP Solution

“Robots are incredibly consistent, which led to a significant drop in defects and a major boost in productivity. But here’s where it gets even better: cobots go beyond that. They actually empower our workers to learn new skills. No more mundane tasks. Our workers now take control of the whole process and level up their expertise.”

### 4 Robot cafe platform

The cafes serviced by RB-series cobots operate 24/7 and are fully unmanned, handling everything from order placement to drink service. Ordering is as simple as using the kiosk, and your drink will be ready in 50 seconds or less. You can conveniently track your order status on the screen.



Yellowphant Coffee

“Yellowphant Coffee stands out from other machine-operated cafes with its wide range of offerings. These unmanned franchise locations serve robot-crafted coffee, ice cream, and a variety of soft drinks. Popular among customers in busy areas like highway rest stops and tourist attractions, notable locations include Deokpyeong Rest Area, Geumwang Rest Area, Jukjeon Rest Area, Busan Diamond Tower, Geoje Cable Car, and Daegu Aquarium.”

### 5 Fried Cooking Robot

Robert using RB series is a robot that automatically performs frying cooking tasks. It is a robot that can cook 50 baskets of fried food per hour, and not only chicken, but also fries such as French fries, cone dogs, and churros.



Robo Arete (Robert Chicken)

“All of our stores have installed a high-tech automated chicken frying system using RB cobots. These cobots not only cook the chicken but also come with safety laser scanners to keep our employees safe. We love how the AI technology optimizes the cooking process, guaranteeing that our recipes turn out exactly as intended. Our franchise owners and corporate headquarters are extremely happy with this cobot solution, especially because it helps us overcome the challenges of increasing labor costs and shortages.”

## Robot Specifications



Product Name	RB3-730	RB3-1200	RB5-850	RB10-1300
Payload	3kg / 6.6 lbs	3kg / 6.6 lbs	5kg / 11 lbs	10kg / 22 lbs
Reach	730mm / 28.7 in	1200mm / 47.2 in	927.7mm / 36.5 in	1300mm / 51.2 in
Repeatability	± 0.05mm	± 0.05mm	± 0.05mm	± 0.05mm
Footprint	Ø 128mm	Ø 173mm	Ø 173mm	Ø 196mm
Material	Aluminum, plastic, steel	Aluminum, plastic, steel	Aluminum, plastic, steel	Aluminum, plastic, steel
Tool connector type	M8 8-pin connector (12/24V, ~2A) 2EA EN ISO 9409-1-50-4-M6	M8 8-pin connector (12/24V, ~2A) 2EA EN ISO 9409-1-50-4-M6	M8 8-pin connector (12/24V, ~2A) 2EA EN ISO 9409-1-50-4-M6	M8 8-pin connector (12/24V, ~2A) 2EA EN ISO 9409-1-50-4-M6
Cable length (Robot arm)	5m / 196.8 in			
Weight	11kg / 24.3 lbs	22.4kg / 49.3 lbs	22kg / 48.5 lbs	37.1kg / 81.8 lbs
Operating environment	IP 54 / 0-50°C	IP 66 / 0-50°C	IP 66 / 0-50°C	IP 66 / 0-50°C
Wattage	100 W with the standard program	200 W with the standard program	200 W with the standard program	350 W with the standard program
Noise	Less than 60dB(A)	Less than 65dB(A)	Less than 65dB(A)	Less than 65dB(A)
Joint range	J1: ± 360° 180°/s	J1: ± 360° 180°/s	J1: ± 360° 180°/s	J1: ± 360° 120°/s
	J2: ± 360° 180°/s	J2: ± 360° 180°/s	J2: ± 360° 180°/s	J2: ± 360° 120°/s
	J3: ± 150° 180°/s	J3: ± 165° 180°/s	J3: ± 165° 180°/s	J3: ± 165° 180°/s
	J4: ± 360° 180°/s	J4: ± 360° 180°/s	J4: ± 360° 180°/s	J4: ± 360° ± 180°/s
	J5: ± 360° 360°/s	J5: ± 360° 180°/s	J5: ± 360° 180°/s	J5: ± 360° 180°/s
	J6: ± 360° 360°/s	J6: ± 360° 180°/s	J6: ± 360° 180°/s	J6: ± 360° 180°/s

## Robot Specifications



Product Name	RB16-900	RB20-1900	RB6-920	RB6-1700
<b>Payload</b>	16kg / 35.3 lbs	20kg / 44 lbs	6kg / 13.2 lbs	6kg / 13.2 lbs
<b>Reach</b>	900mm / 35.4 in	1900mm / 74.8 in	920mm / 36.2 in	1700mm / 66.9 in
<b>Repeatability</b>	± 0.05mm	± 0.05mm	± 0.05mm	± 0.05mm
<b>Footprint</b>	Ø 196mm	Ø 245mm	Ø 173mm	Ø 196mm
<b>Material</b>	Aluminum, plastic, steel	Aluminum, plastic, steel	Aluminum, plastic, steel	Aluminum, plastic, steel
<b>Tool connector type</b>	M8 8-pin connector (12/24V, ~2A) 2EA EN ISO 9409-1-50-4-M6	M8 8-pin connector (12/24V, ~2A) 2EA EN ISO 9409-1-80-6-M8	M8 8-pin connector (12/24V, ~2A) 2EA EN ISO 9409-1-50-4-M6	M8 8-pin connector (12/24V, ~2A) 2EA EN ISO 9409-1-50-4-M6
<b>Cable length (Robot arm)</b>	5m / 196.8 in			
<b>Weight</b>	32kg / 70.5 lbs	75kg / 165.3 lbs	21kg / 46.3 lbs	39kg / 86 lbs
<b>Operating environment</b>	IP 66 / 0-50°C			
<b>Wattage</b>	350 W with the standard program	500 W with the standard program	200 W with the standard program	350 W with the standard program
<b>Noise</b>	Less than 65dB(A)	Less than 65dB(A)	Less than 65dB(A)	Less than 65dB(A)
<b>Joint range</b>	J1: ± 360° 120°/s	J1: ± 360° 120°/s	J1: ± 360° 180°/s	J1: ± 360° 120°/s
	J2: ± 360° 120°/s	J2: ± 360° 120°/s	J2: ± 360° 180°/s	J2: ± 360° 120°/s
	J3: ± 165° 180°/s	J3: ± 150° 120°/s	J3: ± 160° 180°/s	J3: ± 160° 180°/s
	J4: ± 360° 180°/s	J4: ± 360° 180°/s	J4: ± 360° 180°/s	J4: ± 360° ± 180°/s
	J5: ± 360° 180°/s	J5: ± 360° 180°/s	J5: ± 360° 180°/s	J5: ± 360° 180°/s
	J6: ± 360° 180°/s	J6: ± 360° 180°/s	J6: ± 360° 180°/s	J6: ± 360° 180°/s



# World's first NSF-certified cobot RB-N Series

NSF / ANSI 169

F&B Cobot RB-N Series

## ✓ NSF Certified

- NSF/ANSI 169 awarded for Special Purpose Food Equipment and Devices
- Meets requirements for food production facility and equipment

## ✓ Food-safe Cooking robot

- Coated with non-toxic, food-grade paint
- Tested and certified for direct contact with food
- Successfully passed crash tests, ensuring absence of harmful substances from collisions

## ✓ Durable Components

- Rust-resistant SUS fasteners/connections
- High-temperature coupling rings with excellent strength, stiffness, low moisture absorption, fatigue resistance, creep resistance, and hygiene performance

## ✓ Enhanced User Experience

- IP66 rated 6-axis robot arm, providing waterproof and dust-tight protection
- Stand-alone eliminating the need for jacket changes, increasing work efficiency and reducing costs

RB-N series has been certified by the National Sanitation Foundation (NSF) for safe and hygienic use in the food and beverages market. RB-N series is designed to be used as stand-alone units without the need to add any jackets or additional devices to the robot.

RB-N series features three models : RB5-850N, RB3-1200N, and RB10-1300N. RB-N series can be applied in various food and beverage applications, such as fryers using high-temperature oil and espresso machines using high-pressure steam.

※ The specifications of the RB-N series robots are identical to those of the RB series robots.



## NSF Certificate and scope of application



### Various F&B industry applications

- Unmanned robot cafes & bars (Programmable recipes: bubble tea, cocktails, craft coffee, refreshers, etc.)
- Soft serve ice cream robot
- Waffle-making robots
- Chicken-cooking robots
- Kitchen utensils-washing robots, etc.



We touch the core.

Check out Rainbow Robotic's various robot products through our website.



Official Website



Official Youtube



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