

# IBOT-1 AUTOMATIC SOLDERING ROBOT



iBot-1 Can handle PCBs up to 430x420mm

## Description

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- Windows English operation system.
- Self-developed software, easy programming.
- 250W high-power JBC soldering station HDE
- Temperature range: 200- 450°C
- X/Y/Z /R adopts servo motor control system.
- Automatic cleaning of soldering tip.
- Automatic break-tin solder wire feeder.
- Repeatability<0.05mm.
- Using CCD to teach the soldering path, can identify mark points

iBot-1 is a 5 axis servo soldering robot with X,Y,Z,R,and soldering wire feeding motion system. it is equipped with JBC 250W soldering station HDE with rapid heat recovery, soldering tip is easy to be exchanged. Break-tin automatic solder wire feeder can reduce flux remaining problem after soldering.Self-developed software under windows English OS is easy to operate. Using CCD to teach the soldering path, fast programming speed.

## Features

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1. Advanced industrial design, beautiful shape, solid structure break traditional framework, which is more reasonable and practical.
2. X,Y,Z,R,and soldering wire feeding motion system are all controlled by one combined 5 axis motion control card with PC,so it can integrate all the functions into one software like programming , soldering time setting ,solder wire feeding length setting,motion control .it makes machine running more stable and easy to operate.
3. X,Y,Z,R axis adopt quality servo motor with it's control system, make machine run smoothly and precisely.
4. It is equipped with automatic soldering tip cleaning device ,which can improve soldering quality and prolong lifetime of soldering tip.
5. iBot-1 is equipped with industrial PC with windows English operation system, programming very easy.

6. Break tin solder wire feeding system can pierce holes when feeding solder wire ,it can reduce burst tin that causes flux remaining on PCB when soldering under high temperature to improve the soldering quality .solder wire feeding accuracy can reach 0.1mm.

7.250W high-power JBC soldering station HDE has rapid temperature recovery time , soldering tip can be easliy changed.

8.Self-developed advanced software, fool-style programming with controller like play game , all parameters can be set in one program, such as moving path, solder wire feeding quantity, soldering time etc ,very easy to use.

9.Using CCD to teach the soldering path,can identify mark points.Compared to traditional programming methods, it can save a lot of time

10.Equip with smoke cover can provide a very clean work environment.

11. Various JBC soldering tips can meet different process requirement.customized solering tips is also available.

## Specifications

Model	iBot-1	iBot-2
Axes	X/Y/Z/R/wire feeder	X/Y1/Y2/Z/R/wire feeder
Machine travel (X/Y/Z/R)	Standard : 430/420/80mm/320°	Standard: 215/420/80mm/320°*2pcs
Max running speed (X/Y)	500mm/s	500mm/s
Repeat positioning accuracy	±0.05mm	
Platform load	5KG	
Temperature Range	200°C-450°C	
Min Solder wire feeding length	0.1mm	
Solder wire feeder	Standard 0.8mm-1.2mm feeder (break tin), optional 0.6-0.8mm feeder (without break tin)	
Programming method	CCD+Teach panel for programming	
Power supply	Single-phase: AC 220V/110V f : 50HZ/60HZ	
Air pressure	0.4-5kg/cm <sup>2</sup>	
Work environment	0°C~40°C	
Machine size	834*853*1072mm (not include the display)	834*853*1072mm(not include the display)
Weight	About: 150kg	About: 170kg

## General

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Advanced industrial design make machine looks very beautiful, solid structure and X/Y/Z/R servo motor with it's motion control system ensure machine run smoothly and precisely.

JBC heating system with 250W,it has rapid temperature recovery time. The soldering temperature can be displaye in real time. When the temperature control detects a slight change of the temperature on the soldering tip, it will quickly make a temperature compensation action.



## Heating System

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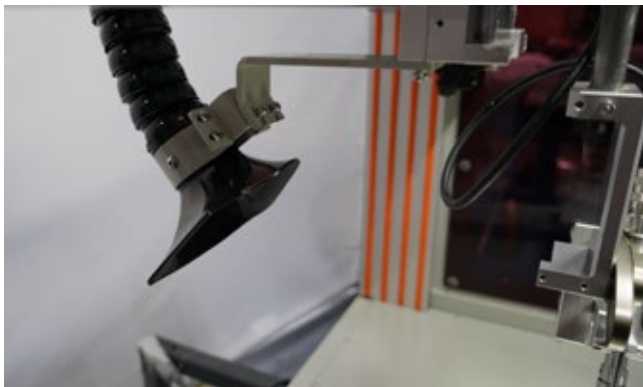
Direct heating method , temperature sensor is closed to the tip of the soldering tip which can detect the minor change and control the temperature precisely heating speed is very fast. With the rotation axis,iron components can rotate 330 degrees, fully meet the different angle of soldering products.

Various JBC R470 type soldering tips can meet different process requirement. customized solering tips is also available according to the product.



## Soldering Head

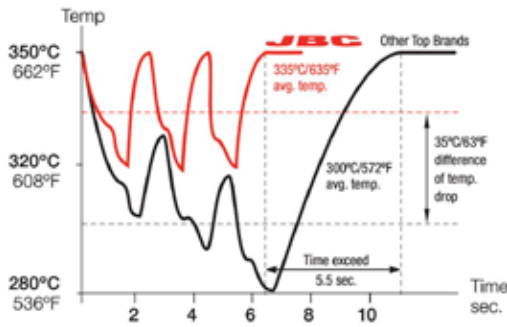
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Smoke cover (optional ) can be easily connected with smoke extractor or exhaust system in workshop, which can provide a clean work environment.

## Efficient Temperature Control

Comparative process of 3 solder joints



Tips with JBC technology only drop 30°C (54°F) where others drop as much as 70°C (126°F)

### Excellent Heat Transfer:

The compact element reduces thermal barriers.

### Instantaneous Heating:

A fully-integrated thermal sensor in the heater ensures quick temperature recovery.

### Great Durability:

The intelligent algorithm control program extends tip life.

## Solder Wire Feeder

Break tin solder wire feeding system can pierce holes when feeding solder wire, it can reduce burst tin that causes flux remaining on PCB when soldering under high temperature to improve the soldering quality. Solder wire feeding accuracy can reach 0.1mm, equipped with Lack tin automatic check function.



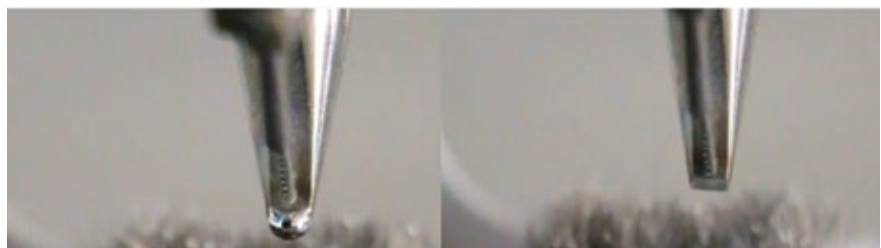
Broken tin wire



## Cleaning System

Cleaning tin by air which can fully clean soldering tip and improve soldering quality. It can quickly remove the residual tin on the soldering tip. No damage to the tip. The clean time can be set free.

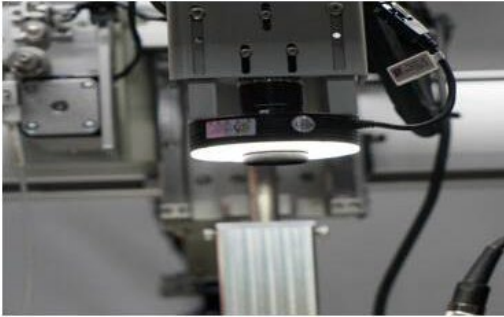
Comparison of images before and after cleaning





## Programming

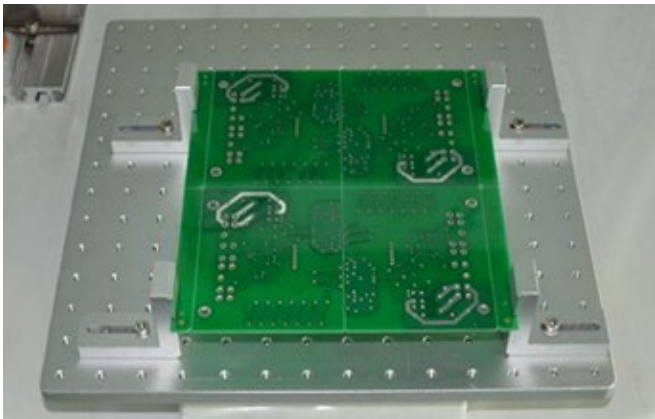
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CCD+Teach panel for programming: Machine Using CCD to teach the soldering path, compared to traditional programming methods, it can save a lot of time and programming is easy. CCD can identify mark points, it can correct the offset of the PCB on the fixture.

## Fixture

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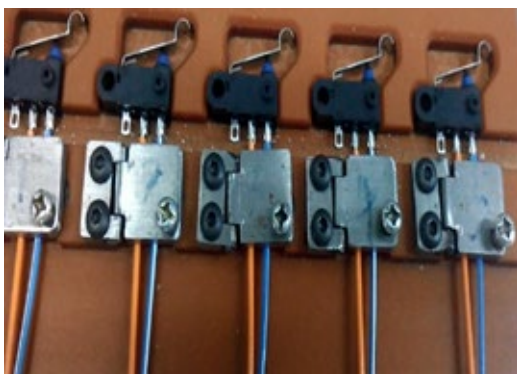
Standard universal fixture.



Customerized fixture according to customer's requirement (option).

## Application

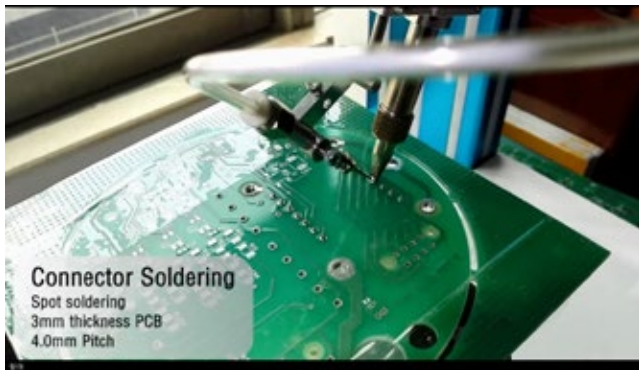
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Micro switch solding



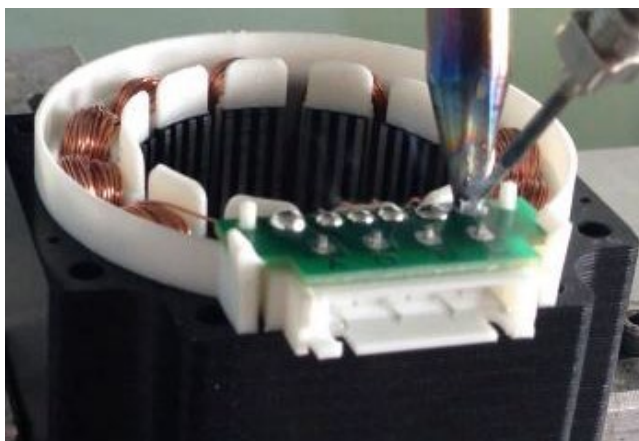
USB soldering



High heat soldering point (connector)



Fine pitch soldering point



Motor soldering

## Standard Configuration

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- Automatic Soldering Robot
- Industrial PC + Display
- X,Y,Z,R and wire feeding driving system
- 0.8-1.2mm solder wire feeder(Break tin)
- 250W high-power JBC soldering station HDE
- CCD+Teaching panel for programming
- Universal fixture 1 set
- Soldering tip \*3 pcs
- Air pipe\*1pcs
- 1 year parts warranty

## Optional configuration

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- Customized fixture
- Smoke exhaust cover
- Fume extractor QB-DX1001
- 0.6-0.8mm solder wire feeder (without break tin function).