



## AUTOMATIC SOLDERING ROBOT

**Operation mode:** Multi-axis drive manipulator and software control to achieve precise positioning of the soldering head.

**Soldering method:** High temperature eddy current heating with a soldering iron.

**Working principle:** Fix solder iron at the manipulator, move to the appointed soldering coordinate, feed solder wire automatically at head of solder iron; solder wire solders under high temperature and come into joint with the target.

### Introduce

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Soldering robot is a soldering robot with soldering wire feeding motion system. High frequency heating system with rapid heat recovery, soldering tip is easy to the exchanged with low cost. Break tin automatic solder wire feeder can reduce flux remaining problem after soldering.

### Features

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1. Cost saving: High-efficiency operation is achieved by only one person. One person's efficiency amounts to 3-5 persons' efficiency.
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.it makes machine running more stable and easy to operate.
3. X,Y,Z,R axis adopt quality step 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. 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.
6. High frequency induction heating system has rapid temperature recovery time, heating element adopt silver coil which can ensure long lifetime. Soldering tip can be easily changed with lower cost.

7. Self-developed advanced software, fool-style programming with wireless 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.
8. Optional smoke cover and smoke extractor can provide a very clean work environment.
9. Various soldering tips can meet different process requirement. Customized soldering tips is also available.
10. One worker can operate 2-3 robots. What this worker does is only pick and place fixture.
11. Robot is strictly customized based on requirements on products and soldering, in line with requirements of production line.

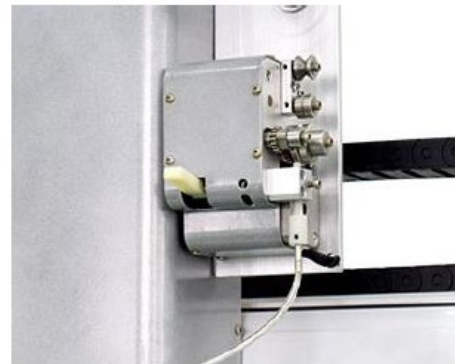
## TOP Advantage

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1. Spot soldering, drag soldering, automatic cleaning and multi-angle soldering are available.
2. Position calibration, soldering dot array, parameter copy, automatic location and skip are available.
3. Teaching programming enables customers to implement all types of hand soldering upon their requirement.
4. Program calibration achieves workpiece integral coordinate position compensation.
5. Program insertion and deletion make program revised easily and rapidly.
6. Intelligent control system achieves accurate delivery of solder, speed, time, temperature and quantity of solder can be adjusted and controlled accurately.



Single and double platform options, can soldering parts in different positions to ensure the best soldering results.



Special structural design ensures good supply of tin wire, no broken wire, stuck and other problems.



Flexible operation, simple programming, fast switching between different products.



Vision options to monitor the soldering effect throughout the process, and can handle high-precision product soldering.

## Applications



## Specifications

| Models               | SR300  | SR530         | SR250D                      | SR250DD                     |
|----------------------|--|---------------|-----------------------------|-----------------------------|
| Platform Number      | 1  | 1             | 2                           | 2                           |
| Head Number          | 1  | 2             | 1                           | 2                           |
| Heating Power        | 150w   | 300w          | 150w                        | 300w                        |
| Max. PCB Size        | 300*300mm  | 500*300mm     | 250*250mm for each Platform | 250*250mm for each Platform |
| Max Move Speed       | X,Y axis: 600-800mm/s. Z axis: 400 mm/s. R axis: 300°/s      |               |                             |                             |
| Soldering Tip Clean  | Steel wire and air pressure (Optional: Rotating Brush Clean) |               |                             |                             |
| Solder Wire          | Φ0.6~1.2mm solder wire                                       |               |                             |                             |
| Solder Feeding Speed | 1~50mm/s   |               |                             |                             |
| Repeated Accuracy    | ±0.02mm  |               |                             |                             |
| Temperature Range    | Room temperature-500C°                                       |               |                             |                             |
| Temperature Accuracy | ±1°C   |               |                             |                             |
| Driving Mode         | Step Motor   |               |                             |                             |
| Control Mode         | Teach Pendant  |               |                             |                             |
| Air Pressure         | 4.5~6Kg/cm2  |               |                             |                             |
| Power Supply         | AC220V±10%, 50/60HZ  |               |                             |                             |
| Dimension            | 750*650*880mm  | 780*660*770mm | 930*650*880mm               | 1280*750*950mm              |
| Weight               | Approx 60kg  | Approx 70kg   | Approx 80kg                 | Approx 85kg                 |

\* The data is obtained under ambient temperature of 25°C and humidity of 60%.

## Materials List

| N° | Item                       | Brand      | Original |
|----|----------------------------|------------|----------|
| 1  | Rack                       | I.C.T      | China    |
| 2  | Temperature controller     | Wheeler    | Germany  |
| 3  | Linear guide               | HIWIN      | Taiwan   |
| 4  | Ball spline                | TBI        | Taiwan   |
| 5  | Ball screw                 | PMI        | Taiwan   |
| 6  | Synchronous gear           | MITSUBOSHI | Japan    |
| 7  | Sensor                     | OMRON      | Japan    |
| 8  | Electromagnetic valve(24V) | SMC        | Japan    |
| 9  | Stepping motor             | Leadshine  | China    |
| 10 | Step driver                | Leadshine  | China    |

## Standard Accessories

| N° | Item            | Quantity |
|----|-----------------|----------|
| 1  | Teach Pendant   | 1set     |
| 2  | Soldering Tip   | 5pcs     |
| 3  | Manual          | 1 book   |
| 4  | Send tin tube   | 1M       |
| 5  | Send tin nozzle | 6pcs     |

\* Keeps working on quality and performance, specifications and appearance may be updated without particular notice.