

## Offline Selective Wave Soldering Machine SS430



### Introduce:

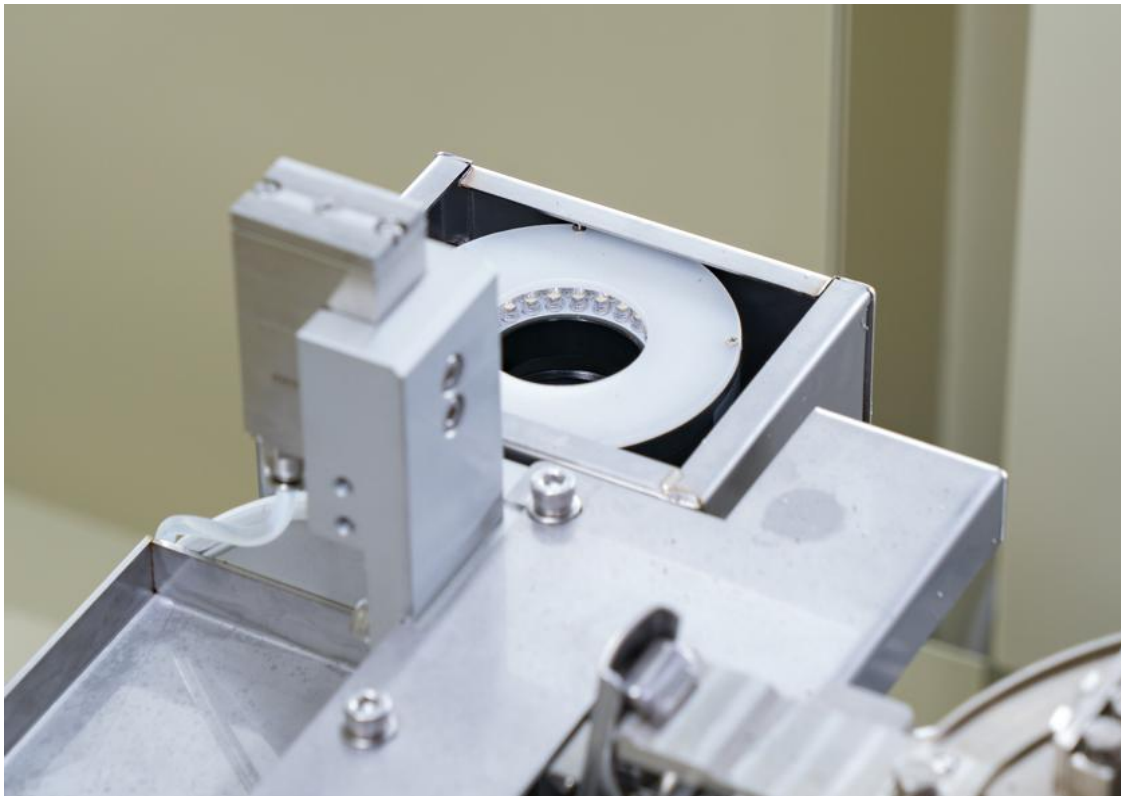
Selective wave soldering is a special form of wave soldering invented to meet the development requirements of through-hole components soldering. It is mainly suitable for the soldering of through-hole components in high-end electronic products. For example: military electronic products, automotive electronics, switching power supply products and other industries which require higher soldering reliability.

I.C.T offline selective wave soldering is a high performance equipment developed and assembled in China. for higher flexibility or multiwave soldering for high-volume processes. product changes without downtime even in multiwave processes, parallel process due to the separation of fluxing, preheating and soldering, operation of up to two spray heads, up to five lower preheatings with optional upper convection heating, perfect for the connection to assembly stands and periphery, connection to traceability systems for process control.

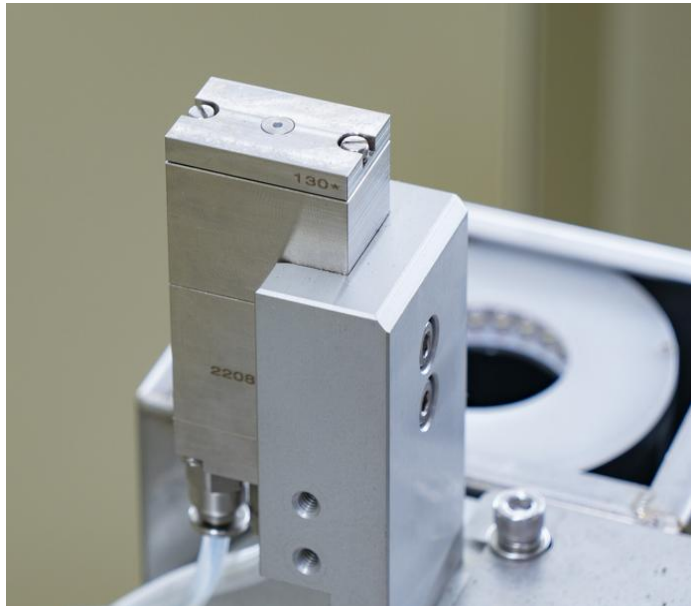
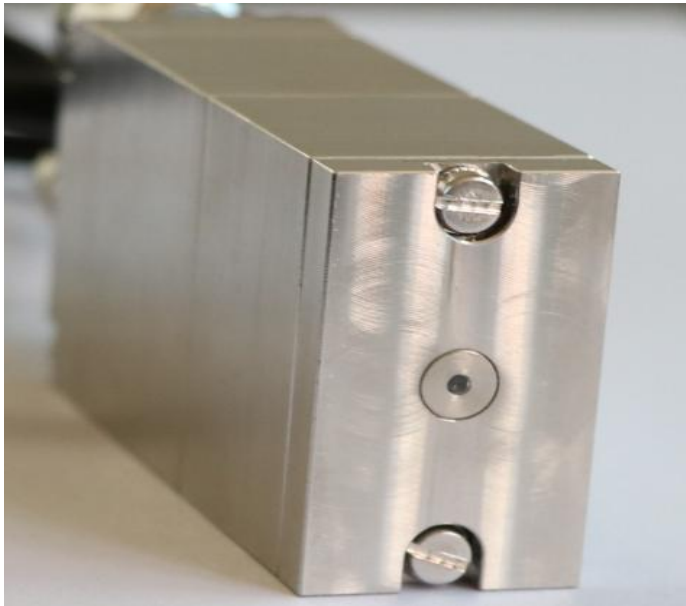
### Features:

1. PCB plate fixed, spray and soldering platform moving;
2. High soldering quality, greatly improve the pass rate of soldering;
3. Full PC control. All parameters can set in PC and saved to PCB menu, like moving path, solder temperature, flux type, solder type, N<sub>2</sub> temperature etc, best trace-ability and easy to get repeat soldering quality;
4. Auto wave height calibration function, to check & calibrate wave's height after every certain PCB, so to keep a very good stability of wave;
5. Can upgraded to be with Mark positioning function, to check PCB's mark point after every certain PCB;
6. Self design motion table with cast aluminum, lighter weight with quick motion speed;
7. Panasonic servo motor&driver provide stable, with ball screw&linear guild rail.less noise, stable movement;
8. With dust proof plate above motion table, so to avoid flux or solder drop to damage ball screw;
9. The jet valve originated in Germany is selected with small flux dot, please note flux solid content should be less than 10%;
10. Flux is stocked by pressure tank, make sure pressure stable without influenced of amount of flux;
11. Electromagnetic pump coil adopts German imported brand to ensure the stability and reliability of the peak;
12. Solder pot is made of Ti, not leakage. With cast iron heater outside, robust&quick heat up;
13. N<sub>2</sub> online heating system, to wet the soldering perfectly and reduce the solder dross.

**Features 1 Flux system:**



Flux Overview



1. German high-frequency pulse injection valve to get precious fluxing result with small flux dot, flux solid content should be less than 10%. The flux nozzle jam detection function is optional.
2. It is configured with tray under the jet valve to catch the flux residue for easy maintenance.
3. The nozzle is mounted on the XY platform, The accuracy of repetition and positioning can reach 0.02mm.



4. Flux is stocked by pressure tank, make sure pressure stable without influenced of amount of flux.
5. High precision pressure flow meter is used for flow control and corrosion resistant material is used.
6. All pneumatic components are made of Japanese SMC brand.



7. Flux pressure flow meter and nitrogen flow are placed on the surface of the machine for visual operation.
8. The external humanized design is convenient for operation and adjustment.
9. SMC brand automatic extraction pump is adopted to ensure stable flux supply.



**Features 2 Preheat system:**



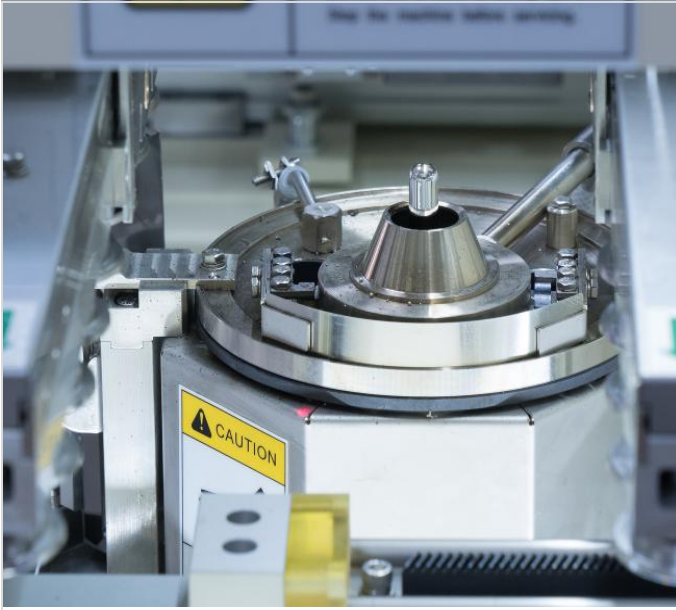
Preheat Overview

1. Bottom preheating is standard equipped in machine, Position is adjustable.
2. Design structure for maximizing preheating area.
3. All round high temperature cotton design to ensure temperature stability.
4. Heat-generating and heat-conducting parts and motors adopt top brands.
5. Maintenance plug-in design. tool-free maintenance mode.

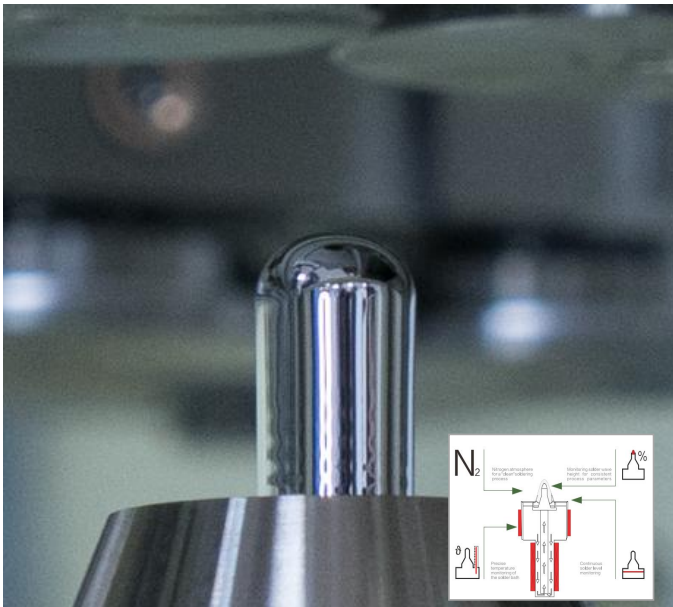
**Features 3 Soldering system:**



Soldering Overview

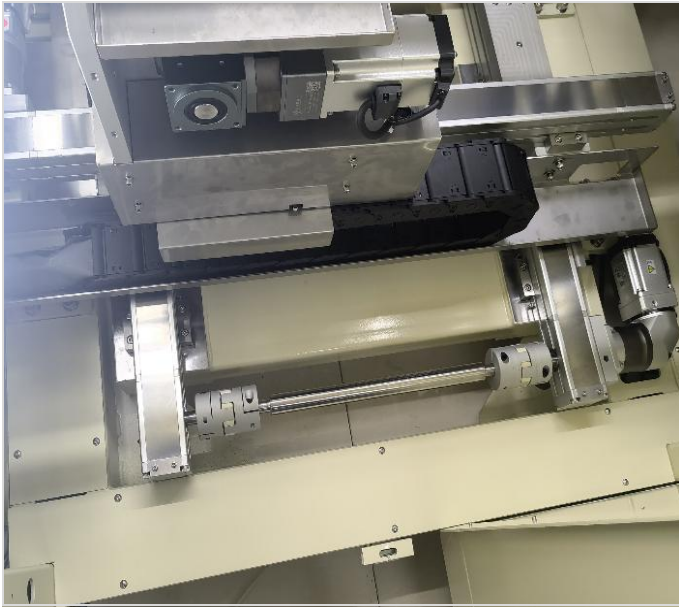


1. Electromagnetic pump coil adopts Sweden "PRECIMETER" brand to ensure the stability and reliability of the peak.
2. Solder temperature, N<sub>2</sub> temperature, wave height, wave calibration etc all able to set in software.
3. Solder pot is made of Ti, not leakage. With cast iron heater outside, robust & quick heat up.
4. N<sub>2</sub> online heating system, to wet the soldering perfectly and reduce the solder dross.



5. Best tin spraying stability in the industry.
6. Real time visual monitoring and Video can be saved and traced for 900 hours.
7. Visual fast programming to improve programming reliability and efficiency.

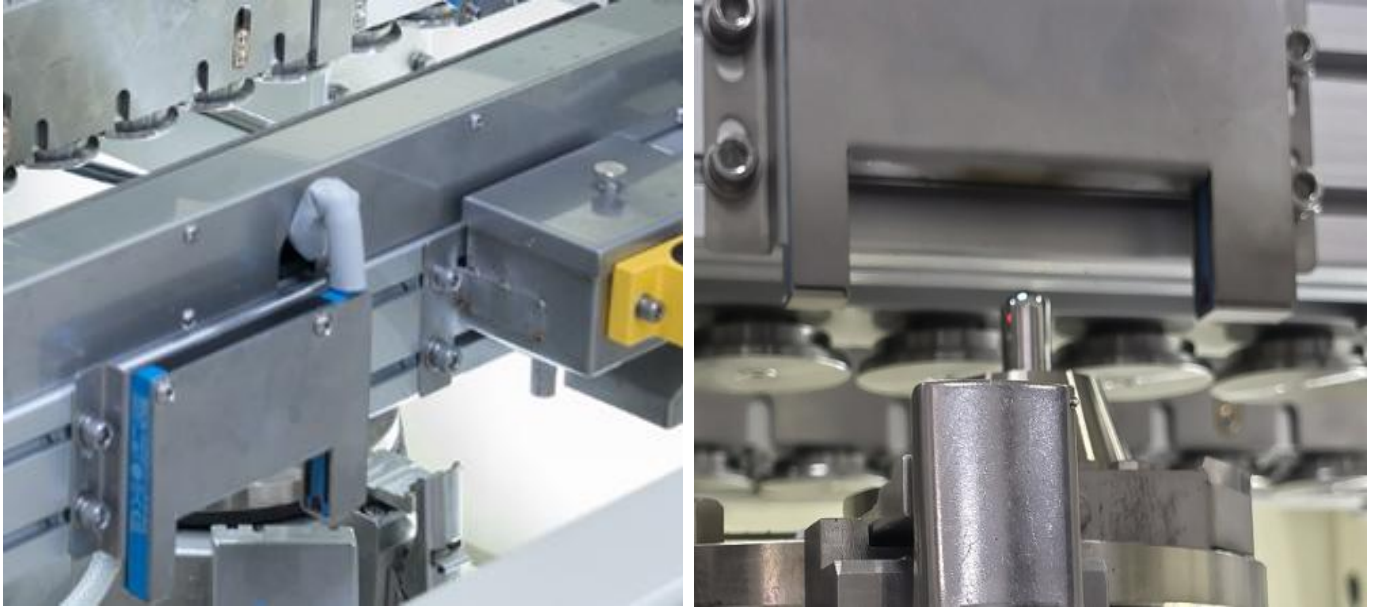




- 8. XYZ platform is composed of high precision lightweight sports module and high-speed servo motor.
- 9. All servo motor are equipped with reducer to ensure stability.
- 10. Sealed and protected, anti pollution treatment.
- 11. Omron Magnetic sensor, ensure more accurate movement.



- 12. Standard with the nozzle automatic cleaning function, Strong cleaning of nozzles with cleaning powder.
- 13. Cleaning frequency can be adjusted flexibly.



14. Laser detection system for soldering wave height (option).

15. German "SICK" non-contact laser sensor is used to ensure measurement accuracy, no pollution and no error measurement(option).

16. Rational Design of Nozzle Cleaning and Measuring Mechanism.

**Features 4 Transmission system:**



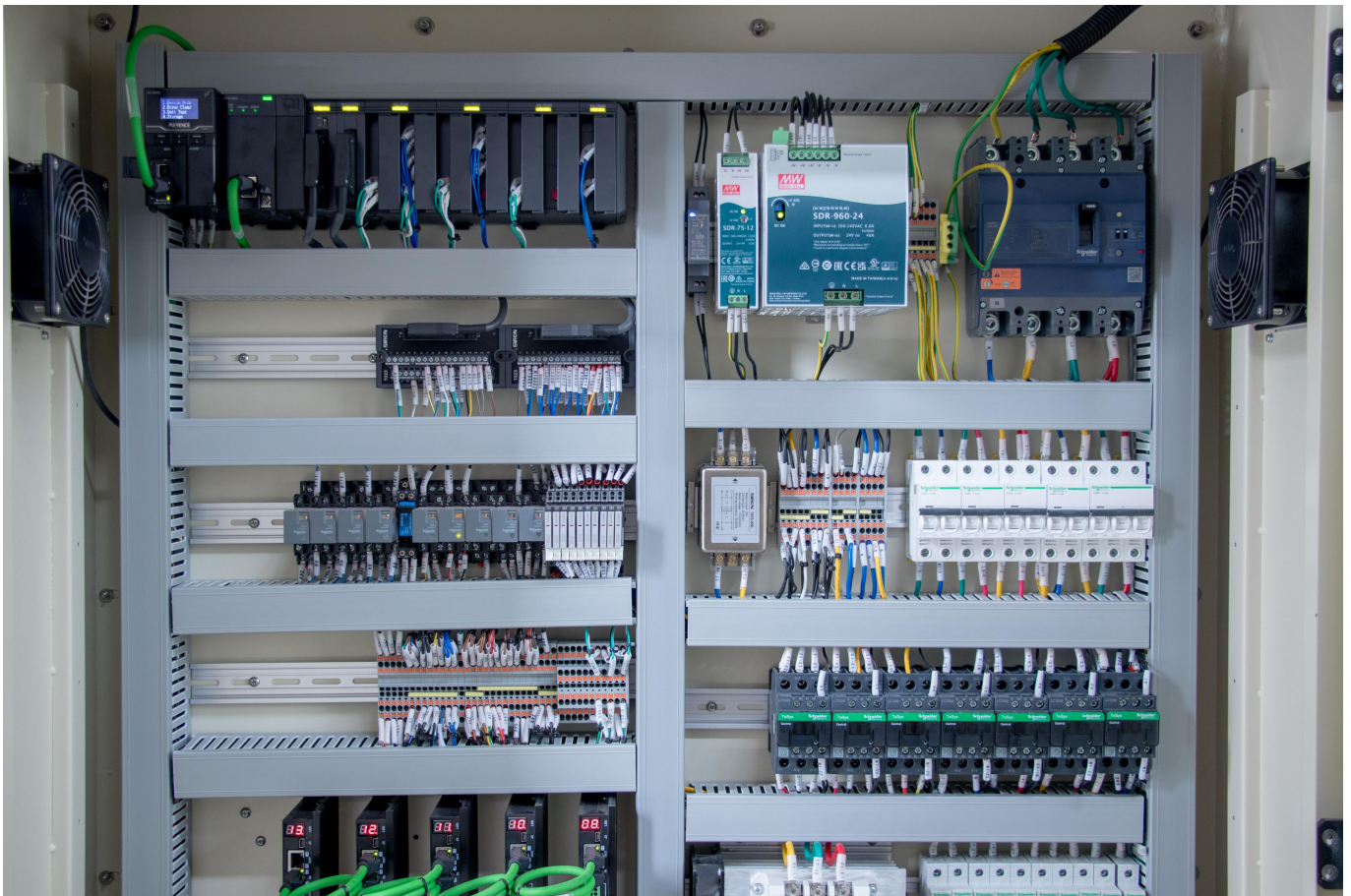
Transmission Overview





1. Special material profiles ensure stability, and rational design ensures convenience.
2. The transmission module is composed of three parts by roller.
3. PCBA side clamp and top clamp system can ensure the stability of the board.
4. Thickened customized rail, 20KG load.

**Features 5 Control system:**



Controlbox Overview



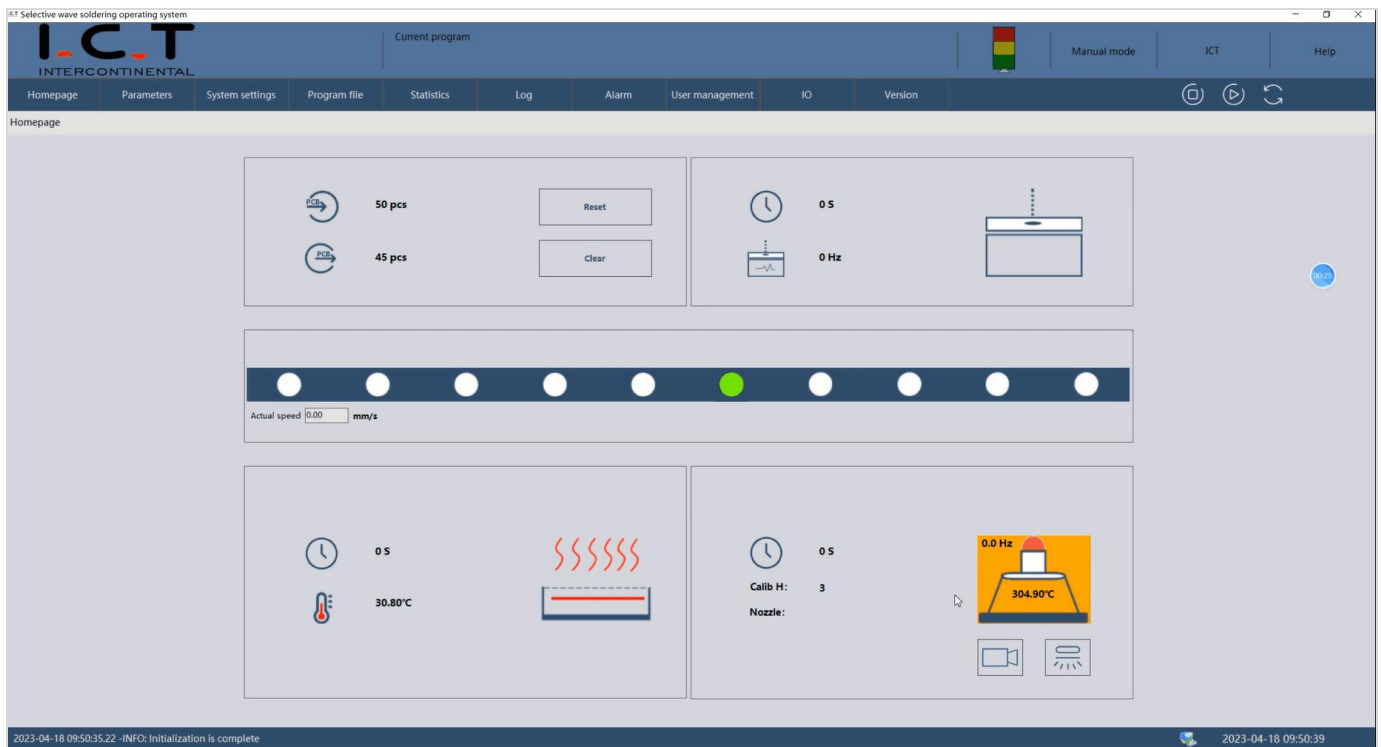


1. Keyence KV7500 PLC+Keyence module high-end bus control system, Ensure the stability and expansibility of the system.
2. Conform to CE and other standards.
3. Underfloor design of Industry 4.0.
4. Ensure the capacity improvement, add the underlying control of the soldering machine module, and ensure the stability.

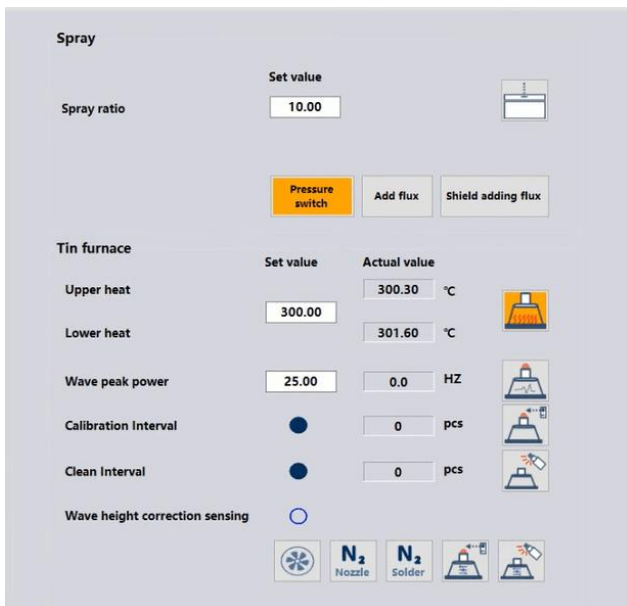


5. Application of global high-quality stability electrical parts.
6. Cat-6 network cable, faster communication speed and sensitive response.

**Features 6 Operating system:**



**Operating Overview**



1. Guided programming mode.
2. CCD fast programming function.
3. Nozzle type auto identification.
4. Picture programming, make coordinate correction, coordinate intelligent verification.
5. Real time data visualization of interface. One button switching of CCD soldering real-time monitoring interface.
6. Chinese, English can be switched.



**Features 7 Intelligence system:**

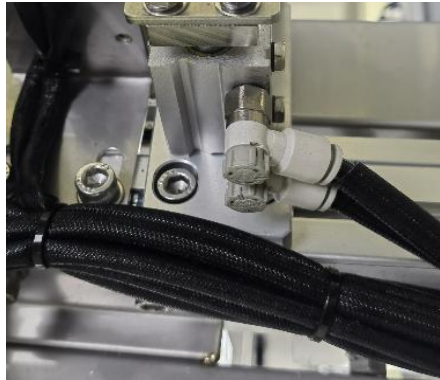


1. Standards and adaptability of MES, WIFI connection, online software upgrade, remote control, intelligent.
2. Soldering data can be traced to confirm the process of each soldering point.

**Other Features:**



Fan outlet diversion and prevention



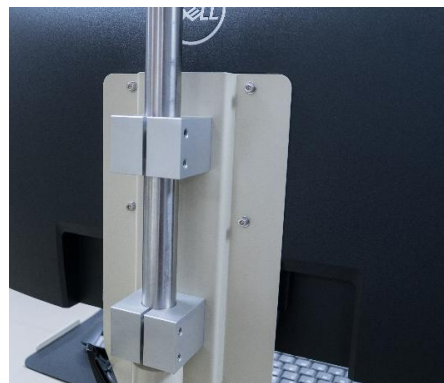
Additional protection of all access lines



Computer cooling type holder



Protection for all connecting wire



Adjustable operating height

**Pump Comparison:**

Comparison	
Electromagnetic pump	Mechanical pump
Made in Sweden	Made in China
Wave stability	Wave stability
Maintenance free	Regular maintenance
Influence of ambient temperature	Mechanical drive, mature technology
Repair free, overall replacement, high cost	Widely used and low maintenance cost

**Leading advantage:**

No.	Item	I.C.T	Other Brand	Conclusions
1	PCBA placement	Reserved space, Configurable robot operation	Put PCBA in machine, operation unchanged	I.C.T is more flexible and practical
2	Soldering wave height detection	Non-contact laser sensor	Contact-type sensor	I.C.T's non-contact laser detection has higher precision and more accurate results. The probes of other companies' Contact-type detection methods are easy to be polluted, affecting the detection accuracy.
3	Solder nozzle type identify	Option	N/A	Some companies do not have this function.
4	Soldering nozzle Jet-flow status real time monitoring	Option	N/A	Some companies do not have this function.
5	Solder wave height monitoring	Option	N/A	Some companies do not have this function.
6	Solder wave cutoff monitoring	Option	N/A	Some companies do not have this function.
7	Tin pot liquid level monitoring	High precision sensor	Differential pressure gauge	Traditional differential pressure sensor has large error, false alarm and inaccuracy.
8	Wave soldering stability	±0.2mm	±1.0mm	The real data ±0.2mm measured by KEYENCE 's laser sensor, the wave soldering stability of I.C.T is leading in the industry.
I.C.T selective wave soldering has a number of leading and mature technology applications.				


**Materials List:**

No.	Item	Brand	Original
1	PLC	Keyence	Japan
2	Solder pot	PRECIMETER	Sweden
3	Spray Nozzle	Jet Valve	Germany
4	Servo motor	Panasonic	Japan



5	Servo driver	Panasonic	Japan
6	Camera	Toshiba/Hikvision	Japan
7	Solder Nozzle	Customized	Japan
8	Ball Screw	THK/Hiwin	Japan/Taiwan
9	Sensor	OMRON, Sick	Japan
10	Stepper motor	Panasonic	Japan
11	Pneumatic Component	SMC	Japan
12	SSR	Carlo	Switzerland
13	Box relay	ABB/Schneider	Switzerland
14	Contactora	ABB/Schneider	Switzerland
15	AC contactor	ABB/Schneider	Switzerland
16	Fiber sensor	Panasonic	Japan/ Germany
17	Magnetic components	SMC	Japan
18	Power	MW	Taiwan
19	Bearing	NSK	Japan
20	Other Electrical Component	IDEC, Mitsubishi	Japan
21	Heating Tube	SAKAGUCHI	Japan

**Specification:**

Model	I.C.T SS430
Photo	
<b>Flux System</b>	
Flux Storage Tank	1L
Flux Support	Flux Alarm, Automatic
Spray Nozzle	Germany Jet Valve (Spot and line spraying) 1set
Spray Nozzle Size	130um (180, 210um Option)
Spray Range	3~8mm
Spray Speed	0~20mm/s
Spray Nozzle Move Speed	0~400mm/s
Spray Precision	0.1mm
Spray Pressure	0.05~0.1MPa
Spray Height Adjustment	Auto
Spray Flow Control	Electronic Flow Meter 1set
Spray Nozzle Jam Detection	Option
Flux Tank	Pressure tank
<b>Preheating System</b>	
Preheating Mode	IR Heating
Preheating Area	L500mm*W500mm

Preheating Zone	Bottom: 1
Bottom Preheating Power	Max.12kw
Top Preheating Power	N/A
Preheating Temp.	(Room Temperature) -250°C
Warm-up Time	Approx.15min (setting 150°C)
Control Mode	PC+PLC
<b>Soldering System</b>	
Nozzle Inner Diameter	Φ 2.5-30mm (Customization Special dimensions)
Wave Height	3~5mm
Solder Pot Z axis Area	50 mm
Soldering Precision	±0.25 mm
Solder Pot Drive	XYZ independent drive
Auto Feeding Solder Wire	Optional, Tin wire Φ2mm, Max. 4kg
Solder Pot Liquid Level Detection	High precision sensor
Soldering Wave Height Detection	Laser sensor (Option)
Solder Pot Move Speed	0~400mm/s
Solder Pot Z axis Move Speed	0~100mm/s
Soldering Monitoring	CCD
Wave Control	Electromagnetic pump (Sweden) Mechanical pump is option
Solder Pot Quantity	1 set
Solder Pot power	2.35kw
Solder Capacity	11Kg
Max. Temperature	350°C
Heating Control	PID + SSR
Temperature Accuracy	±1°C
Warm-up Time	<60min (setting 300°C)
<b>Transport System</b>	
Max Fixture Size	500*500mm
Max PCB Size	500*500mm
PCB Replacement	Offline
Components Lead Pin Pitch	≥0.5mm
Components and Pad Clearance	≥1.5mm
PCB Top Clearance	120mm
PCB Bottom Clearance	60mm
PCB Weight	<20Kg
PCB Thickness	0.5-6.0mm
Clearance from PCB Edge	4mm
Transport Height	900±20mm
Transport Direction	Front~Rear
Transport Width	60~500mm
Width Adjustment	N/A



Transport Mode	High precision module
<b>Software System</b>	
Operating System	Windows10
Language	Chinese, English
Programming Mode	CCD fast online program. Picture program.
Program Import	CCD shooting, Picture import
Nozzle Type Auto Identify	Option
Soldering Nozzle Jet-flow Status Real Time Monitoring	Option
Barcode Scanner	Option
<b>Facility</b>	
N <sub>2</sub> Purity	Purity of N <sub>2</sub> : 99.999%, 25 L/min, Outer diameter Φ6mm
N <sub>2</sub> Pressure	0.5~1.0 MPa
N <sub>2</sub> Pressure Monitoring	Low pressure automatic alarm
N <sub>2</sub> Consumption	(1.5~2m <sup>3</sup> /h)/Pot
Air Pressure	4~6Kg/cm <sup>2</sup>
Air Pressure Monitoring	Low pressure automatic alarm
Air Source Flow	8~12L/min
Compressed Air Consumption	≤0.014m <sup>3</sup> /h
Power Supply	380V, 50/60HZ
Power	52A, 35Kw
Operator Power	5-8Kw
Exhaust Volume	700m <sup>3</sup> /h
Exhaust Pipe Diameter	Φ190mm*2
Dimension	L1400*W2580*H1722mm
Weight	Approx 700kg

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




#### Standard Accessories:

No.	Item	Spec.	Quantity
1	Soldering nozzle	3/6	1 PCS
2	Soldering nozzle	4/8	1 PCS
3	Soldering nozzle	6/10	1 PCS
4	Soldering nozzle	8/12	1 PCS
5	Soldering nozzle	10/14	1 PCS
6	Nozzle cleaning fluid	NC02H-011	1 Bottle
7	Nozzle cleaning powder	NC02H-021	1 Bottle
8	Rubber hammer	10mm	1 PCS
9	Oil knife	4-18 Inches	1 PCS
10	Steel ruler	150mm	1 PCS

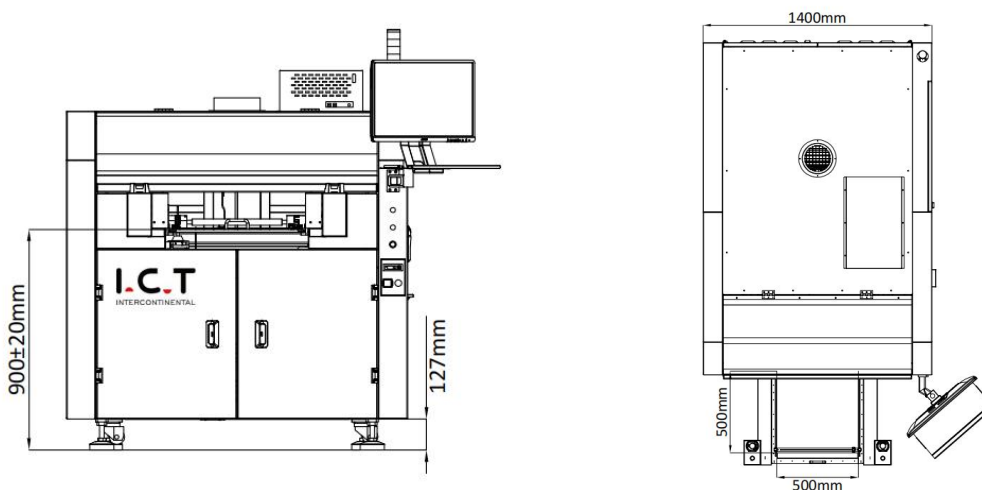
11	Steel brush	NA	1 PCS
12	Tin slag spoon (small)	304 Stainless steel	1 PCS
13	Protection goggle	OBAOLAY	1 PCS
14	Calibration glass plate	125Mm*125mm	1 PCS
15	Heat gloves	High temperature resistance: 500°C	1 Pair
16	Cotton swab	/	1 PCS

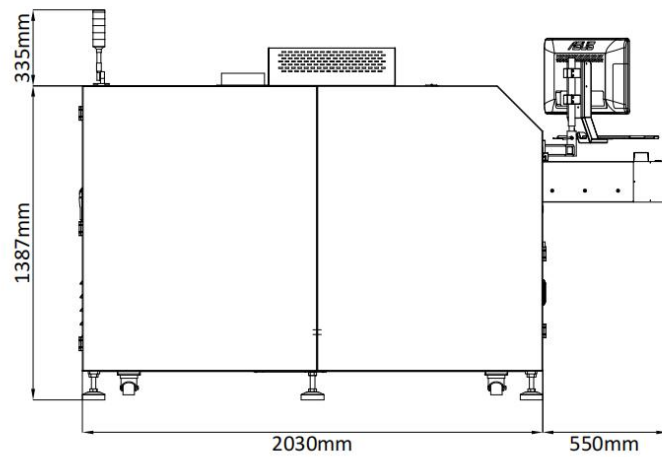
\* Attachments may change with product upgrade. If different, please follow the new list.

**Customers:**

1	Name	Country	Product
2		Japan	Toyota&Honda etc., Automotive Electronics
3		Japan	Toyota etc., Japanese automotive electronics
4		Italy& Japan	Automotive Electronics
5		Japan	Automotive Electronics
6		Japan	Medical Equipment
7		Japan	Camera Equipment

**Dimension:**









\* I.C.T keeps working on quality and performance, specifications and appearance may be updated without particular notice.

YouTube video link: <https://youtu.be/FSLjQZng-P4>

**Thanks for choosing I.C.T.**  
**I.C.T looks forward to win-win cooperation.**  
**Thank you.**