

**I.C.T PCBA Conformal Coating Machine**



“Industry 4.0”: is the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of things and cloud computing.

“Smart Factory”: Within the modular structured smart factories, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions. “Information Sharing”: Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real time, and via the Internet of Services, both internal and cross-organizational services are offered and used by participants of the value chain.



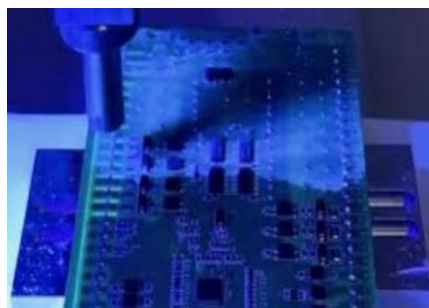
A Manufacturing Execution System (MES) is a control system for managing and monitoring work-in-process on a factory floor. An MES keeps track of all manufacturing information in real time, receiving up-to-the-minute data from robots, machines and employees. The goal of MES is to improve productivity and reduce cycle-time, total time to produce an order.

Automation is especially attractive in processes where manual interaction can result in quality or safety issues. I.C.T is trying to integrate the industrial 4.0 and MES system. And achieve maximum automation level.

**This is the process with PCBA Conformal Coating Machine need to be AUTOMATED**



Are you still applying the coating manually?



How can I improve the quality of my coating glue?



Dispensing glue too thick?

**Introduce:**

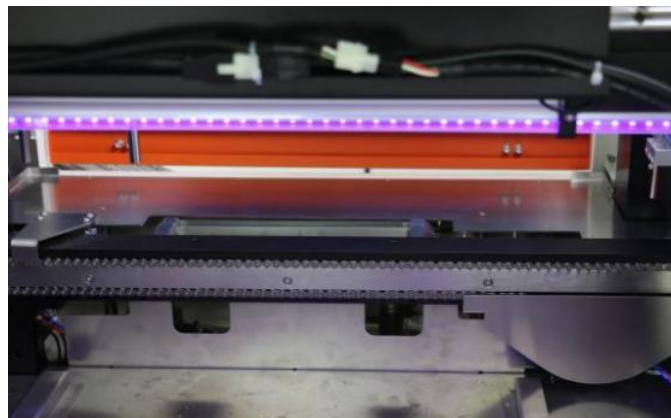
I.C.T selective coating machine is the new benchmark for simple and efficient PCBA coating. Its easy program making, fast line change settings and high repeatability bring the best results in all directions. It matches different applications and meets various needs. It is widely used in the fields of drive power, industrial control, LED, automotive electronics, communication, instrumentation, consumer electronics, electronic appliances, military, medical boiler, etc.

**Features:**

1. Gum valve automation air pressure adjustment, pressure barrel air pressure adjustment, are using imported precision regulator, configuration digital display pressure gauge.
2. The power supply and air pressure adjustment are placed in the front of the equipment, directly adjust, humanized design, improve the efficiency of the operator.
3. Open model material conveying track, hardening treatment, special stainless steel chain for the carrier transmission, equipped with stainless steel wear strips, extend the life of the track.
4. Track amplitude adjustment adopts synchronous belt drive mechanism to ensure that the track is adjusted for a long time without flare phenomenon.
5. The whole CNC processing of the frame plate, independent pure steel gantry, to ensure that the track and the axis of parallel vertical.
6. The import and export of the track is equipped with wind curtain to prevent the exhaust gas from leaking out, equipped with independent exhaust gas discharge port to improve the workshop environment.
7. Programming can be edited any spraying track, using the teaching mode programming, spraying path in the main interface, intuitive visual.
8. Fault sound and light alarm and menu display, humanized design of operation interface, simple and beautiful.
9. Running trajectory can be mirrored, array, copy function, for multiple boards, just editing a piece of the trajectory can be, fast and convenient.
10. Automatic statistics and display of the data, production, single product working time, etc.
11. If you want to wait for the product during the work, the rubber valve will automatically move to the soaking area to prevent the rubber valve mouth from curing and affecting the coating effect.

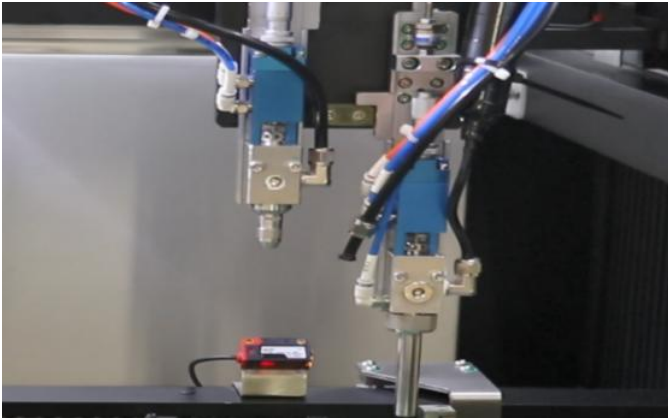
**TOP Advantage:**

1. Simple: Combine with the international advanced concept, based on the operating system designed in the East, easy to learn.
2. Professional: Learn the advanced design concept of imported coating machine, and the core parts of the machine are all imported top brands.
3. Hedging: Imported hardware configuration, low failure rate in production, and long service life of more than ten years.
4. Safety: Based on the international common design rules, close to the imported coating machine level, the highest safety level.
5. Stability: Mature software, hardware and top production process to ensure the stability of each machine.



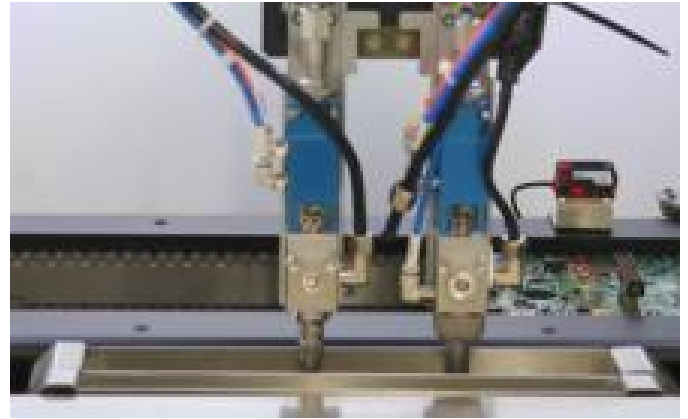
**Coating dispensing system**

Double suspended direct-connected glue valve structure. The glue valves are independently controlled by two high-speed solenoid valves to ensure accurate and stable glue dispensing times and volumes. Double side slides ensure the accuracy and stability of the glue valves before and after operation.



**Transport system**

The unique chain transport system effectively prevents clogging of the PCBs, the motor controls the speed, the stop position is precise, the track width can be adjusted semi-automatically and the PCBs can enter and exit freely. The track can also withstand larger weights of PCBs without deformation.



**Soaking system**

If you need to wait for the product during work, the glue application valve automatically moves to the soaking area to prevent the glue at the mouth of the application valve from curing and affecting the glue application.

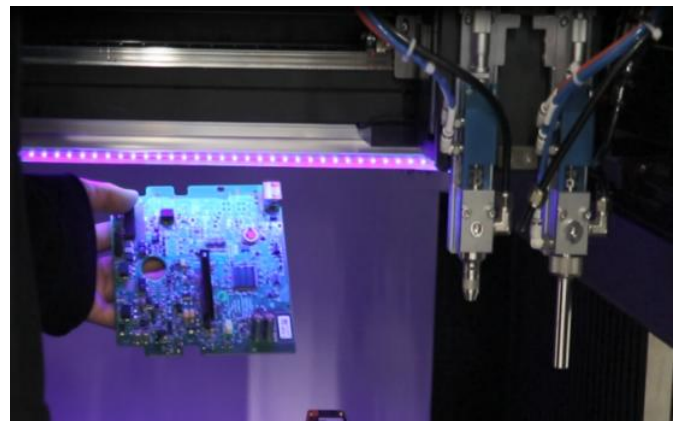
**Dual valve Z-axis height control system**

The flexible dual valve Z-axis height control system allows the distance between the nozzle and the board to be adjusted according to the height of the element, resulting in a more consistent and uniform glue width. The glue valve can flexibly dodge the component during the coating process, effectively preventing the component from colliding with the glue valve.



**Lighting system**

The light system emits ultraviolet light, allowing the engineer to quickly obtain good coating results by checking the coating effect of inconspicuous glues such as UV glue at all times.



**Operator system**

Windows 10, user-friendly operator interface, teaching and navigation functions. Operation log, fault log analysis and other diagnostic functions. New programs are created successfully in less than 10 minutes.

**Option function:**



**Visual positioning system**

Visual positioning by camera for high speed and precision identification of MARK points, calibration of coating position, component position and adjustment of coating volume



**Smart paint volume testing**

It automatically senses the remaining quantity of paint in the paint bucket. When the remaining quantity falls below the set lower limit, the equipment will promptly pop up a window and automatically stop the coating action, effectively preventing production quality problems caused by running out of paint.



**Industrial laser code reading devices**

A separate laser code reader for accurate recognition of PCB barcode, which, when connected to the MES system, helps the factory to better manage production sequences and manage production batches.



**Automatic cleaning of glue valves**

A separate bucket of glue cleaning fluid, which automatically fills the glue valve and pipe with cleaning fluid when the function is switched on, and automatically cleans the valve and pipe within a set cleaning time.



**Automatic return to orbit**

Connect with SPI to form a closed loop system. When bad information feedback, printer will adjust automatic. It can adjust automatically in 3pcs and cleaning stencil automatically.



**Industry 4.0 and MES**




By automatically uploading or exporting the state and parameter, the intelligent production can be realized, the docking with customer MES system can be realized.




**Power failure protection**




The device can store the last channel switching command during normal operation. When a power failure occurs due to an unexpected situation, the device will still store this command and will automatically return to the original switching state when the power is connected.

**Valve Type:**

| Valve   | Photo   | Description  |
|---|---|--|
| <p>C-0101<br/>Water curtain<br/>spray valve</p>                   |    | <p>Features and advantages: a non atomized water curtain coating valve for low viscosity solvent materials, which is coated in the form of water curtain. The sprayed products have no splash and flash point, and the edges are neat and perfect.<br/>Application scope: such as three proofing coating, UV glue, adhesive, solvent / volatile materials and other surface coating materials, which are widely used in electronic packaging industry, lighting industry, automobile industry, packaging industry, medical industry and energy industry.<br/>Dimension: L28*W28*H200mm<br/>Rotation angle: 0°or 90°<br/>Drive air pressure: 0.5~1.0Mpa<br/>Spraying width: 6~15mm<br/>Spraying thickness: 100um~350um<br/>Optimal viscosity range: 10~90Cps<br/>Weight: 500g</p>   |
| <p>C-L101<br/>Rotary water<br/>curtain spray<br/>valve</p>        |   | <p>Features and advantages: a non atomized water curtain coating valve for low viscosity solvent materials, which is coated in the form of water curtain. The sprayed products have no splash and flash point, and the edges are neat and perfect.<br/>Application scope: such as three proofing coating, UV glue, adhesive, solvent / volatile materials and other surface coating materials, which are widely used in electronic packaging industry, lighting industry, automobile industry, packaging industry, medical industry and energy industry.<br/>Dimension: L28*W28*H200mm<br/>Rotation angle: 0°or 90°<br/>Drive air pressure: 0.5~1.0Mpa<br/>Spraying width: 6~15mm<br/>Spraying thickness: 100um~350um<br/>Optimal viscosity range: 10~90Cps<br/>Weight: 500g</p>   |
| <p>PJ-01 Injection<br/>valve<br/>(without plastic<br/>bucket)</p> |  | <p>PJ-01 is used in electronic packaging industry, lighting industry, energy industry, life technology and other applications requiring high precision, high efficiency and space constraints.<br/>It is suitable for dispensing or spraying with high precision. Thanks to the high precision dispensing, it can be dispensed on the complex circuit board. The glue coating operation can point red glue, solder paste and other liquid and paste materials.<br/>Overall dimension: L60*W26*H120mm<br/>Weight: 0.3Kg<br/>Driving pressure: 0.5~1.0Mpa<br/>Maximum operating frequency: 200 beats per second<br/>Minimum point diameter: 0.4mm<br/>Optimum viscosity range: 1-20000Cps<br/>Minimum driving pressure: 70Psi<br/>Valve body heating: 24V room temperature~150°C<br/>Open valve inlet pipe specifications: 6mm tube<br/>Matching: Optional glue nozzle</p> |



|  |   |   |
|--|---|---|
| <p>C-0100<br/>Non-rotating<br/>film valves</p> |    | <p>No air pressure involved relative to air pressure atomizing valve, can provide more accurate edge clarity.<br/>The width of the film can be selected by controlling the feeding pressure of the pressure barrel.<br/>To solve the problem of atomizing valve atomizing drifting and quick drying glue, glue flocculant.<br/>Dimensions: L25*W25*H219.5mm<br/>Driving pressure: 0.3Mpa<br/>Optimum viscosity range: 100~200Cps<br/>Weight: 0.3Kg<br/>Spraying width: 6~12mm<br/>Spraying thickness: 250~450um<br/>Atomizing width: 10~15mm</p>  |
| <p>D-0100<br/>Precision valve</p>              |   | <p>D-0100 firing pin dispensing valve is driven by compressed air and has a special fluid sealing structure, which reduces the frequency of sealing ring replacement and has the characteristics of long life and quick maintenance.<br/>Suitable for a variety of liquid fluid spraying: UV glue, bottom filling glue, silicone, epoxy glue, surface coating glue, etc.<br/>Glue needle nozzle specification: 0.2~2mm<br/>Driving pressure: 0.3Mpa<br/>Optimum viscosity range: 30~6500Cps<br/>Weight: 0.26Kg<br/>Minimum line width: 1mm<br/>Minimum dispensing diameter: 1.5um<br/>The minimum dispensing space is up to 1.2mm</p> |
| <p>D-0300<br/>Dispensing<br/>valve</p>         |  | <p>Protruding needle design, achieve zero residue.<br/>Easy to clean without disassembly.<br/>Liquid volume and air pressure can be adjusted.<br/>It can meet the atomizing effect of various coatings.<br/>Driving pressure: 0.3Mpa<br/>Fluid pressure: 0~0.5Mpa<br/>Optimum viscosity range: 0~3500Cps<br/>Weight: 0.28Kg<br/>Applicable fluid: Acrylic acid, silicon, epoxy, UV glue<br/>Spraying thickness: 50~200um<br/>Atomizing width: 3~6mm</p>   |

|   |   |  |
|---|---|--|
| <p>W-0300<br/>Small<br/>atomization<br/>valve</p> |    | <p>Protruding needle design, achieve zero residue.<br/>Easy to clean without disassembly.<br/>Liquid volume and air pressure can be adjusted.<br/>It can meet the atomizing effect of various coatings.<br/>Driving pressure: 0.3Mpa<br/>Fluid pressure: 0~0.5Mpa<br/>Optimum viscosity range: 0~3500Cps<br/>Weight: 0.28Kg<br/>Applicable fluid: acrylic acid, silicon, epoxy, UV glue<br/>Spraying thickness: 50~200um<br/>Atomizing width: 3~5mm</p>    |
| <p>W-1500<br/>Small<br/>atomization<br/>valve</p> |   | <p>Protruding needle design, achieve zero residue.<br/>Easy to clean without disassembly.<br/>Liquid volume and air pressure can be adjusted.<br/>It can meet the atomizing effect of various coatings.<br/>Driving pressure: 0.3Mpa<br/>Fluid pressure: 0~0.5Mpa<br/>Optimum viscosity range: 0~3500Cps<br/>Weight: 0.28Kg<br/>Applicable fluid: acrylic acid, silicon, epoxy, UV glue<br/>Spraying thickness: 50~200um<br/>Atomizing width: 5~15mm</p>   |
| <p>W-3000<br/>Large<br/>atomization<br/>glue</p>  |  | <p>Protruding needle design, achieve zero residue.<br/>Easy to clean without disassembly.<br/>Liquid volume and air pressure can be adjusted.<br/>It can meet the atomizing effect of various coatings.<br/>Driving pressure: 0.3Mpa<br/>Fluid pressure: 0~0.5Mpa<br/>Optimum viscosity range: 0~3500Cps<br/>Weight: 0.28Kg<br/>Applicable fluid: acrylic acid, silicon, epoxy, UV glue<br/>Spraying thickness: 100~200um<br/>Atomizing width: 10~30mm</p> |

**Materials List:**

| No. | Item                       | Brand     | Original      |
|-----|----------------------------|-----------|---------------|
| 1   | Motion Control Cards       | Goodco    | China         |
| 2   | LCD Monitors               | Asus      | China         |
| 3   | Industrial Control Machine | Advantech | China         |
| 4   | Servo Motor                | Fuji      | Japan         |
| 5   | Servo Drives               | Fuji      | Japan         |
| 6   | Ball Screws                | TBI       | United States |
| 7   | Linear Slide Rail          | PMI       | China         |
| 8   | Cylinder                   | SMC/xinch | China         |

|    |                           |            |       |
|----|---------------------------|------------|-------|
| 9  | Photoelectric Sensors     | Omron      | Japan |
| 10 | Microswitch               | Omron      | Japan |
| 11 | LED Light Bar             | Huitronics | China |
| 12 | Deep Groove Ball Bearings | NSK        | Japan |
| 13 | Ceramic Fuse              | Zhengtai   | China |

**Specification:**

| Model                           | I.C.T-T550   | I.C.T-T550U  | I.C.T-T600                   | I.C.T-T650   |
|---------------------------------|--|--|------------------------------|--|
| Number of valves                | 2 (atomization valve 1 head, precision valve 1 head)                     | 2 (atomization valve 1 head, precision valve 1 head) | 2 (atomization valve 2 head) | 4 (atomization valve 2 head, precision valve 2 head) |
| Control method                  | IPC + Motion Control Card  |  |                              |  |
| Number of spindles              | X, Y, Z  | X, Y, Z, U   | X, Y, Z                      | X, Y, Z  |
| Valve rotation angle            | N/A  | ±180°  | N/A                          | N/A  |
| Valve bevel                     | N/A  | 0~35°  | N/A                          | N/A  |
| PCB size                        | 50*50~450*460mm  |  |                              |  |
| Spindle drive                   | Imported servo motor+ball screw module                                   |  |                              |  |
| Gantry structure                | Steel + independent gantry   |  |                              |  |
| Work itinerary                  | X=450mm, Y=450mm, Z=100mm  |  |                              |  |
| Repetition accuracy             | ±0.02mm  |  |                              |  |
| Movement speed (optimum)        | 800mm/s  |  |                              |  |
| Actual movement speed           | 400mm/s (The max speed can be adjusted according to the glue viscosity.) |  |                              |  |
| Fogging air pressure adjustment | Imported precision regulator+digital display meter                       |  |                              |  |
| Spray edge definition           | ±1mm   |  |                              |  |
| Working height                  | 900±20mm   |  |                              |  |
| Max height of components        | 90mm above and below the conveying surface                               |  |                              |  |
| Transport direction             | Left to Right; Right to Left   |  |                              |  |
| Conveying speed                 | 2~13m/min  |  |                              |  |
| Conveyor track                  | Special aluminum alloy track + stainless steel chain                     |  |                              |  |
| Width adjustment method         | Push-button electric amplitude adjustment                                |  |                              |  |
| Widening speed                  | 250mm/min  |  |                              |  |
| PCB edge space                  | ≥5mm   |  |                              |  |
| Transmission motor power        | DC24V 69W*2  |  |                              |  |
| Single coating width            | 2~30mm   |  |                              |  |
| Equipment air pressure          | 0.4Mpa   |  |                              |  |
| Exhaust air volume requirements | 15m <sup>3</sup> /min  |  |                              |  |
| Coating capacity                | 10L  |  |                              |  |
| Automatic cleaning of valves    | with 5L Pressure Tank  |  |                              |  |
| Power supply                    | AC 220V±10%, 50/60HZ, 2.2KW  |  |                              |  |



|                 |                    |
|-----------------|--------------------|
| Operator system | Windows10          |
| Dimension       | L900*W1300*H1675mm |
| Net weight      | 650KG              |

**Standard Configuration:**

| No. | Item                        |
|-----|-----------------------------|
| 1   | LED UV Light Detection Lamp |
| 2   | LED Lighting                |
| 3   | Waste Liquid Recovery       |

**Option Function:**

| No. | Item                          |
|-----|-------------------------------|
| 1   | PCBA Bottom Return            |
| 2   | UPS                           |
| 3   | Voltage Stabilizer            |
| 4   | Industrial Barcode Scanner    |
| 5   | Smart Paint Volume Monitoring |

**Standard Accessories:**

| No. | Item  | Quantity |
|-----|---|----------|
| 1   | Firing pin dispensing valve ejector           | 1 set    |
| 2   | Dispensing valve firing pin dispensing nozzle | 1 pcs    |
| 3   | Small atomizing thimble                       | 1 roll   |
| 4   | Small atomizing nozzle                        | 1 pcs    |
| 5   | Large fogging nozzle                          | 1 pcs    |
| 6   | Large fog flower ejector                      | 1 pcs    |
| 7   | Photoelectric sensor                          | 6 pcs    |
| 8   | Micro switch                                  | 2 books  |
| 9   | Tool case                                     | 1 set    |
| 10  | LED light bar                                 | 1 set    |
| 11  | Ceramic fuse                                  | 1 set    |
| 12  | 25# Idler pulley mount                        | 8 set    |
| 13  | 25# idler pulley                              | 8 set    |
| 14  | Deep groove ball bearing                      | 8 set    |

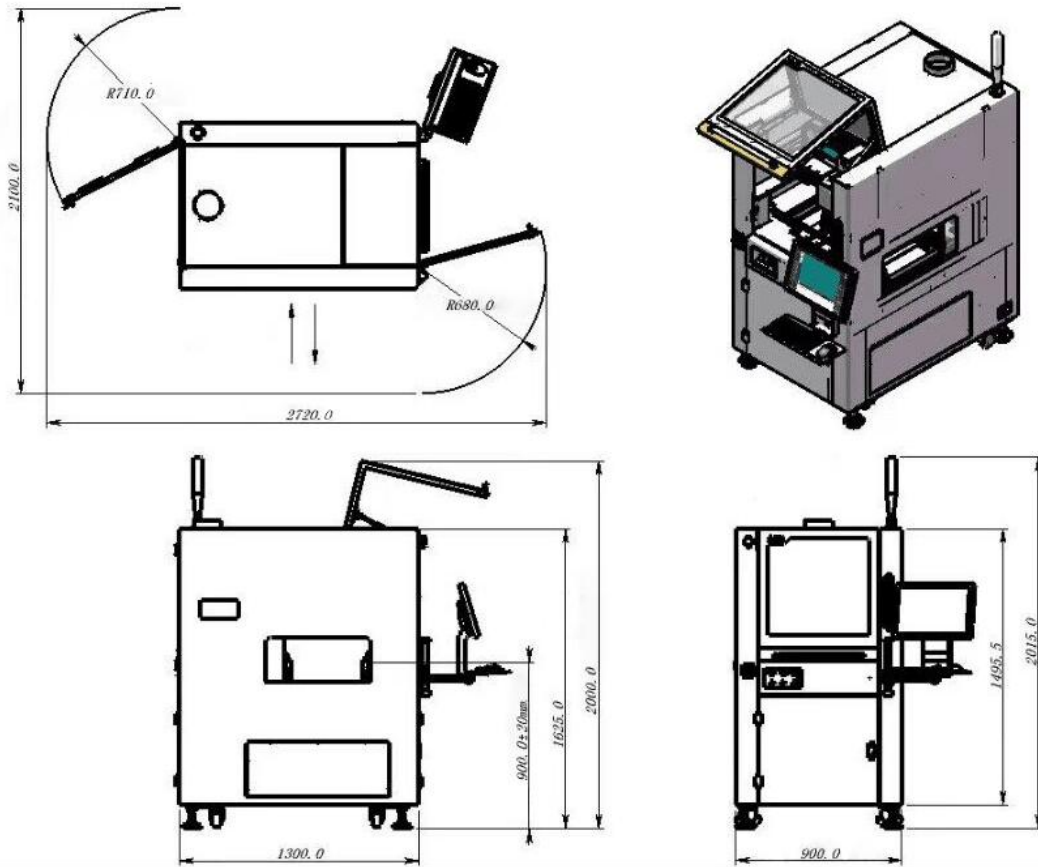
\* Attachments may change with product upgrade. If different, please follow the new list.

**Recommend Spare Parts:**

| No. | Item                               | Brand | Quantity | Usually replacement cycle     |
|-----|------------------------------------|-------|----------|-------------------------------|
| 1   | Needle dispensing valve top        | I.C.T | 1 pcs    | 1 year                        |
| 2   | Dispensing valve firing pin nozzle | I.C.T | 1 pcs    | 1 year                        |
| 3   | Small atomizing thimble            | I.C.T | 1 pcs    | 1 year                        |
| 4   | Small atomizing nozzle             | I.C.T | 1 pcs    | 1 year                        |
| 5   | Photoelectric sensor               | Omron | 6 pcs    | 2 years                       |
| 6   | Micro switch                       | Omron | 2 pcs    | Induction times 100,000 times |
| 7   | LED light bar                      | I.C.T | 1 pcs    | 2 years                       |

|   |              |      |       |          |
|---|--------------|------|-------|----------|
| 8 | Ceramic fuse | CHNT | 1 pcs | 6 months |
|---|--------------|------|-------|----------|

**Dimensions:**



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

**YouTube Video Link:**

[https://youtu.be/r1ob3Vm\\_H9M](https://youtu.be/r1ob3Vm_H9M)

[https://youtu.be/U7esUM\\_atU4](https://youtu.be/U7esUM_atU4)

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