
TVM802 DESKTOP PICK AND PLACE MACHINE



EASY /RELIABLE /SAFTY /PEACE OF MIND

Wenzhou Yingxing Technology Co.,Ltd

———— www.zjyingxing.com ————

Catalog

1	Preface	4
1.1	Security	4
1.2	Guarantee	5
2	Learn Equipment	5
2.1	Equipment Overview	5
2.2	Hardware Properties	5
2.3	Software Features	5
2.4	Nozzle Specification	6
2.5	Description of Coordinate System	7
2.6	PCB Specification	7
2.7	Accessories	7
3	Machine structure Introduction	8
4	PC Software Introduction	9
4.1	Manual Operation	10
4.1.1	Computer Operation	10
4.1.2	Control Panel Operation	11
4.2	Visual Window	12
4.3	Locating and Running	12
4.4	Origin Location	13
4.5	PCB Set	14

4.6	System Settings.....	14
5	Read Before Using	18
5.1	Mechanical Structure is Normal	18
5.2	Video Cable is Properly Connected.....	18
5.3	Connected To The Computer	19
5.4	Check Each Function is Normal	19
5.5	Home Position Return	19
6	Necessary Skills Before Mounting	20
6.1	Tray Installation	20
6.2	PCB Installation.....	20
6.3	Front-Stack Material Coordinate Set.....	21
6.4	Nozzle Replacement	22
6.5	Export Coordinates.....	22
6.5.1	Origin Location.....	23
6.5.2	Altium Designer (DXP) Export Coordinates.....	23
6.5.3	Protel99 Export Coordinates File	24
6.6	Mark Point Set.....	25
6.6.1	No Makeup	25
6.6.2	Makeup	26
6.6.3	Mark point recognition mode	27
6.6.4	Mark point recognition operation	27
7	Program	30
7.1	Import Coordinate.....	30
7.2	Manual Editing Coordinates	32
7.2.1	No Coordinate Information.....	32
7.2.2	There Have Coordinate Information, No Mark Point Information.....	34
8	Test PCB Board	36
9	Common Trouble.....	37
9.1	The Camera Can Not Recognize	37
9.2	Chip Identification is incorrect	38
9.3	No Mark Point Mount.....	38
9.4	Nozzle Correction.....	38
9.5	Manually Add Mark Point	39
9.6	Stack Coordinate Correcting.....	39
9.7	Prick Stuck.....	40
9.8	Chip Through Visual is Not Accurate.....	41
9.9	Jumping Gear.....	42
9.10	Nylon Belt Can Not Be Separated	43
10	Preventive Maintenance	44
10.1	Nozzle Maintenance	44
10.2	Surface cleaning of machine.....	44
10.3	Check The Stack	44
10.4	Cleaning The Camera	44
10.5	Lubricate the XY-axis guide rail.....	44
10.6	computer Antivirus	44

1 Preface

Thank you for purchasing and using our automatic vision placement machine (hereinafter referred to briefly as "equipment"). The working principle of this equipment is picked component up from the feeding tray or the stack, through the visual system correction coordinate position, then mount on the circuit board.

1.1 Security

This equipment contains feed zone, work area and control area. If related equipment does not operate correctly, it may cause damage to personnel and equipment. The operator should have the basic skills include editing software, the basic system hardware and additional devices such as feeder maintenance.



Before use equipment

- You must read the instructions before using the machine, and fully understand the contents of this manual before operating.
- After reading this specification, please keep on your side, for any doubt.
- Unrelated persons prohibited to operate this equipment.
- To ensure the safe operation and maintenance of equipment, operators must be aware of potential risk area.
- If operator transformation equipment without Wenzhou Yingxing Technology Co.,Ltd. the prior consent, or did not follow the instructions to maintenance equipment, will be possible serious damage to equipment safety.
- Must not use without Wenzhou Yingxing Technology Co.,Ltd. admit method modification and maintenance of equipment.

1.2 Guarantee

When equipment have abnormal behavior, guarantee content as follows:

Content security The material or manufacturing problems constituting parts and equipment problems, provide free maintenance service.

Guarantee period After date of shipment, the whole machine warranty is 1 year, nozzle is for 1 month, belt for 6 months.

Except security matters **The following situations, do not provide warranty:**

When the storage device is damaged, it does not guarantee the loss of data stored, so usually should be prepared to back up.

Since the operation and use of the equipment unrelated of the program caused by malfunction of the system due to virus infection or other reasons cause data damage.

Natural wear and tear caused by anomalies over time, or equipment occurs (such as: depreciation paint, plating, consumables, etc.).

The equipment does not affect the quality and performance of weak sensory changes (such as: the sound operation of the controller, the motor rotation sound, pump sounds, etc.).

Using environmental conditions cause anomalies (such as: water, powder and not pure substance, the dust on the machinery and equipment, oil, etc.).

Earthquake, typhoon, flood, fire, lightning and other natural disasters or accidents.

Equipment maintenance imperfections or mistakes.

2 Learn Equipment

2.1 Equipment Overview

While the first generation of type TVM801A equipment makes great achievements, our research team aims to develop faster and more precise products, now promotes the second generation of type TVM802A, TVM802B equipment, which is remarkably characterized by double-head double-vision design. The equipment is the first of its kind in the domestic market and takes the absolute leading position in the same industry.

2.2 Hardware Properties





The boundary dimension of this equipment is 875mm*640mm*310mm, TVM802B size is 875mm*940mm*310mm. It mainly consists of a work head, top and bottom visual systems, a work table, feeder etc. Power supply AC220 or AC110V, Power should be 150W.

2.3 Software Features

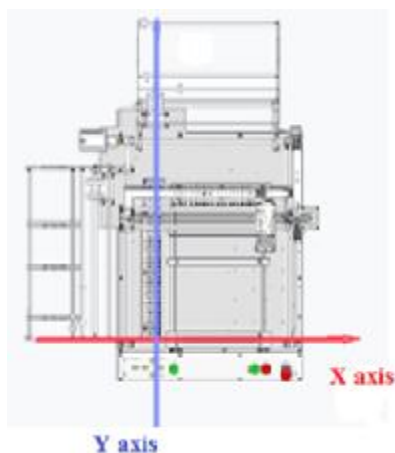
The software is independently developed by our company, with independent intellectual property rights, have Chinese and English interface, and easy operation. The software is written in under win7 environment, so customers need to prepare computer win7, movement in other systems, there may be a bug.

2.4 Nozzle Specification

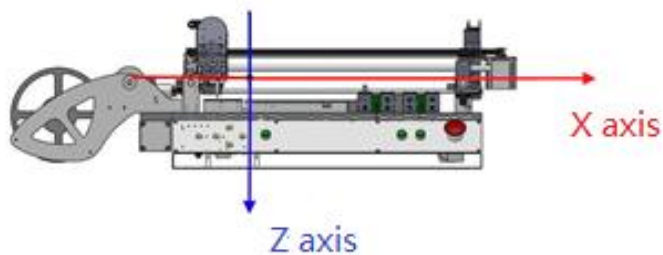
This equipment adopts double-head design, every suction heads are equipped with different types of nozzles is universal JUKI nozzle. There are No. 1, No. 2, No.3 , No. 4 nozzles available. Under normal condition, No. 1 suction nozzle is the smallest, while the No. 4 suction nozzle is the biggest. Components corresponding to every suction nozzle are shown below:

Suction Nozzle Model No.	Legend	Suitable Encapsulation
Suction Nozzle No. 1		Recommended Encapsulation: 0603
Suction Nozzle No. 2		Recommended Encapsulation: 0805,1206, 1210, 2512
Suction Nozzle No. 3		Recommended Encapsulation: 3528, 5050, SOP-8
Suction Nozzle No. 4		Recommended Encapsulation: TQFP, SSOP etc requires precise placement of large chip.

2.5 Description of Coordinate System



Picture 2.5.1



Picture 2.5.2

Picture 2.5.1 and Picture 2.5.2 show the coordinate system of this equipment. The moving range of X and Y axis is 395*445mm (This data is not absolute), while the moving range of Z axis is 15mm. The equipment in the coordinate position refers to the position corresponding to the nozzle A, the other coordinates are relative to the nozzle A offset.

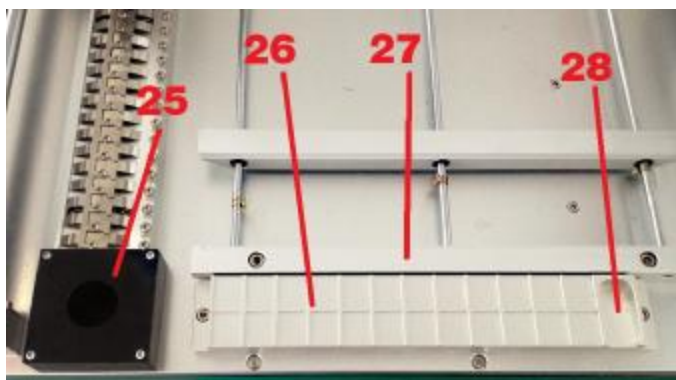
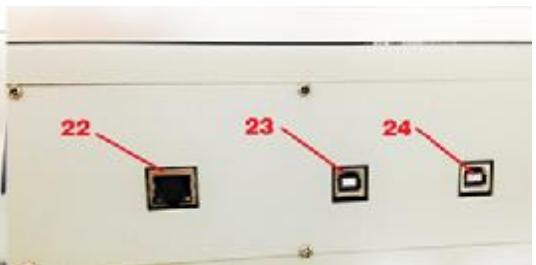
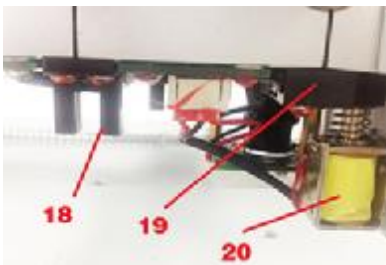
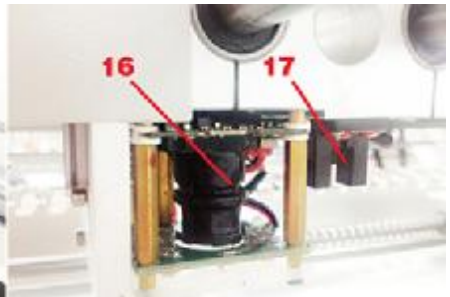
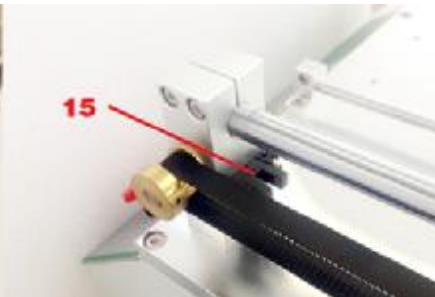
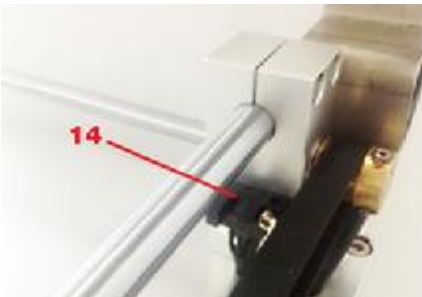
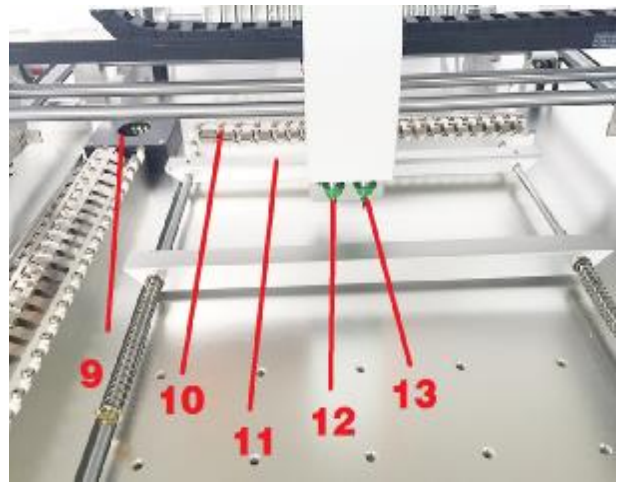
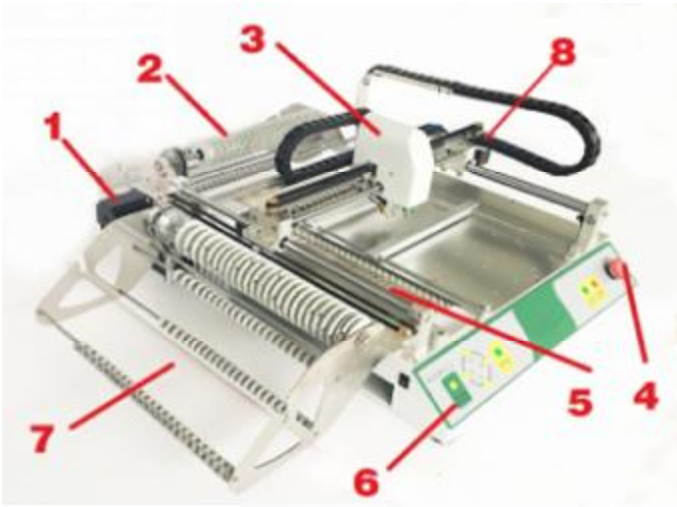
2.6 PCB Specification

802A applies to PCB of size 340*340mm at most, 802B applies to PCB of size 330mm*300.

2.7 Accessories

The device is equipped with, 1* NO1 nozzle, 1*NO2 nozzle, 1*NO3 nozzle, 1*NO4 nozzle, 1* power cable, 1* network cable, 2* USB cables (video line) .

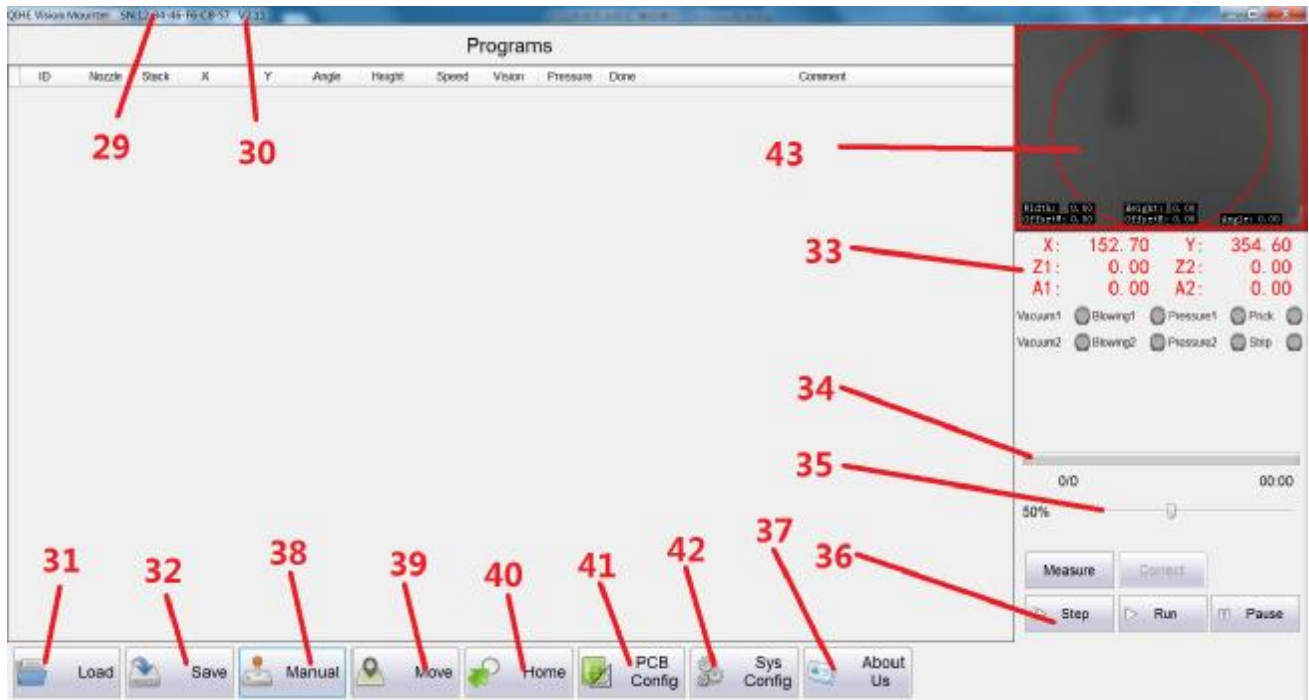
3 Machine structure Introduction



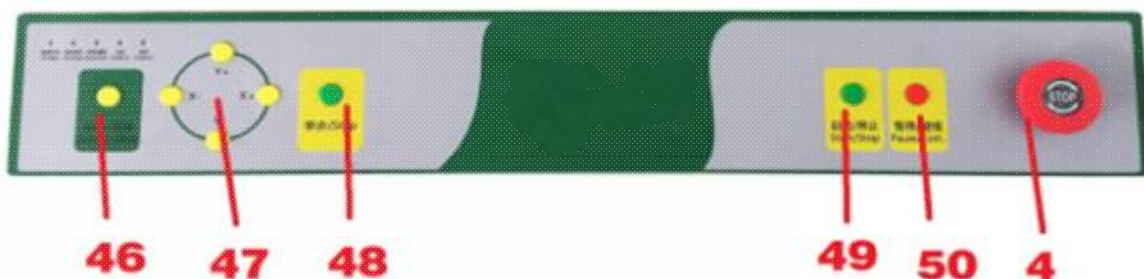
1, Y-axis motor 2, the rear side of the feed frame (802B only), 3, heads 4, emergency stop button 5, the left feeding clamp, 802A have 26 trough, 802B 24 trough, 6, the control panel 7, the left side of the feed rack 8, X-axis motor 9, 802B top camera 10, the rear side of the feed folder (802B only), have 24 trough 11, TVM802B PCB clip 12, A nozzle 13, B nozzle 14, Y positive limit sensor 15, Y negative limit sensor 16, the next vision cameras 17, X positive limit sensor 18, X negative limit sensor 19, prick sensor 20, the electromagnet prick 21, power switch 22, network interface 23, bottom vision camera interface 24, up visual camera interface 25, 802A up visual camera 26, Front-stack material (802A only) 27, 802A PCB clip 28, scrap trough.

18, X negative limit sensor 19, prick sensor 20, the electromagnet prick 21, power switch 22, network interface 23, bottom vision camera interface 24, up visual camera interface 25, 802A up visual camera 26, Front-stack material (802A only) 27, 802A PCB clip 28, scrap trough.

4 PC Software Introduction



Picture 4.0.1



Picture 4.0.2

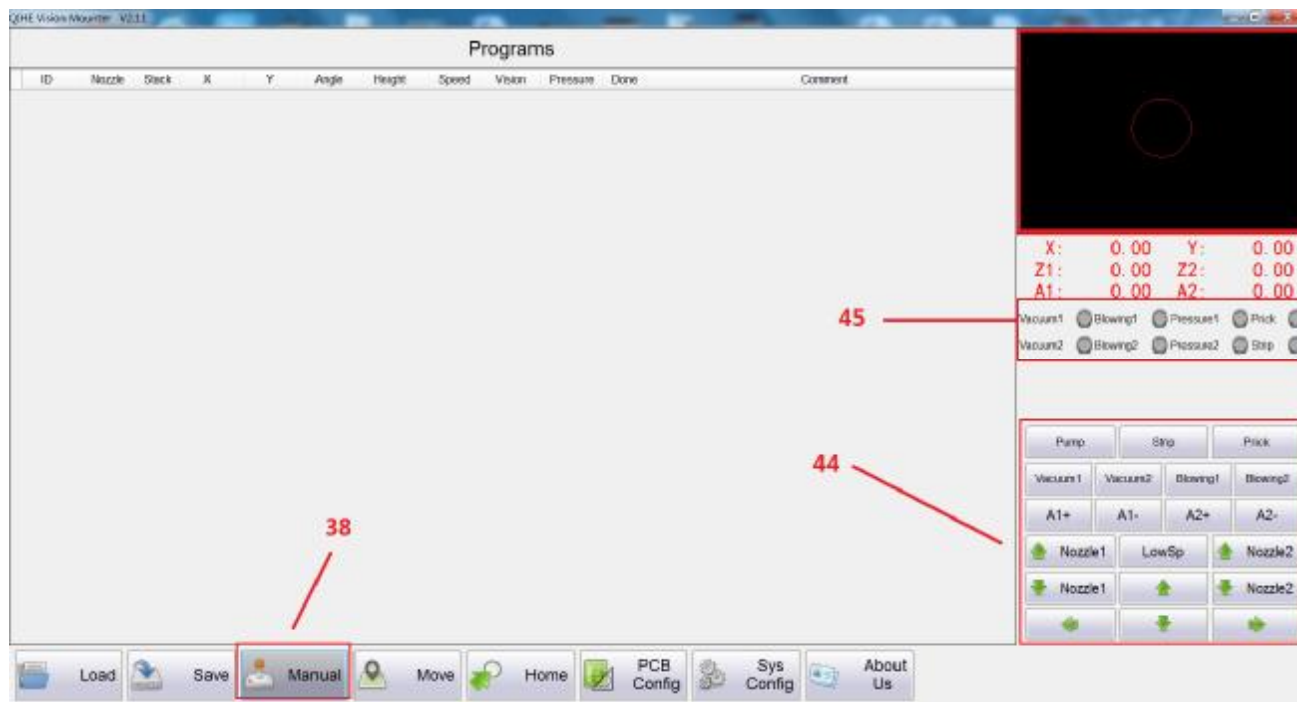
Picture 4.0.1 of the software's main interface

29, this equipment SN number 30, PC software version number 31, load the file, load the required patch file that can be guided by the PCB software CSV format file containing coordinate information, this software can also be used to manually edit the CSV format file containing coordinate information

32, save the file, the files you import coordinate information is subject to change, it needs to saved. 33, the coordinate information of the equipment. If the number is red, indicating that coordinate information has not been produced, does not have the operating conditions, can only operate in manual mode 34, progress bar, displays the total number of devices need to mount, the number of devices have been completed placement, how long it takes 35, overall speed of the machine, the fastest rate of 120%; general debugging, with the default rate of 50 percent debugging; running speed is 100% or 110% 36, single-step, automatic, stop, three function keys correspond to the keys 49 and 50 on Picture 4.0.2 37, factory parameter, which contains the coordinate information only for our factory debugging, the customer version does not have this feature, any special requirements, the Company may acquire and modify the contents of the technical staff under the guidance.

4.1 Manual Operation

4.1.1 Computer Operation



Picture 4.1.1

Click 38, the manual mode, the screen will switch to as shown in Picture 4.1.1, block 44 where the function keys in manual mode. Press the function key, block 45 in the corresponding lights will light up, indicating that the output signal correctly.

Vacuum pump: open or close the vacuum pump.

In the vacuum pump is opened, click vacuum 1, then vacuum 1 signal lights up, nozzle A create suction, with a finger to block the nozzle, a pressure of 1 signal lights up, turn off the vacuum pump and vacuum 1, open blowing 1, blowing 1 signal lights up, put a finger on the nozzle A, will feel the gas blow, accomplish the above described, state nozzle A air passage is normal.

In the vacuum pump is opened, click the vacuum 2, then vacuum 2 signal lights up, nozzle B create suction, with a finger to block the nozzle, pressure of 2 signal lights up, turn off the vacuum pump and vacuum 2, open blowing 2, blowing 2 signal lights up, put a finger on the nozzle B, you will feel the gas blow, accomplish the above described, it means nozzle B have normal air passage.

Reel: click, reel out a signal from the rotation, in the process of movement, reel indicator lights up.

Prick : click, the electromagnet 20 is energized to produce a magnetic force, which the prick drop, prick indicator lights up, and then click again, the electromagnet 20 off, prick back into place, prick off the lights.

A+: Nozzle A positive direction to turn 360° (positive or negative direction and angle of the coordinate system same with positive and negative)

A—: Nozzle A negative direction to turn the nozzle 360°

B+: Nozzle B positive direction to turn 360° (positive or negative direction and angle of the coordinate system same with positive and negative)

B—: Nozzle B negative direction to turn the nozzle 360°

Nozzle1↑: Nozzle A upward movement, nozzle A at the origin, the function key is invalid.

Nozzle1↓: Nozzle A downward movement,the maximum stroke is 16mm.

Nozzle2↑: Nozzle B upward movement, nozzle B at the origin, the function key is invalid.

Nozzle2↓: Nozzle B downward movement,the maximum stroke is 16mm.

←: When heads 3 running the negative X direction, corresponding to 47 in the X- button.

→: When heads 3 running the positive X direction, corresponding to 47 in the X+ button.

↑: When heads 3 running the positive Y direction, corresponding to 47 in the Y+ button.

↓: When heads 3 running the negative Y direction, corresponding to 47 in the Y- button.

Dot Mode (Picture 4.0.2 46 button): click, between dot mode and continuous mode switching, in manual mode control head speed.

4.1.2 Control Panel Operation



Picture 4.1.2

46, Dot / continuous button is in manual operation, for X-axis Y-axis direction speed adjustment, divide into dot mode (press one time, feed 0.03mm) and fast mode. When fine-tuning need to use dot mode.

47, Direction control buttons, to control the positive and negative direction of movement of the working head along the X and Y axes.

48, Single-step buttons, subdivide of each placement action, click, go for some procedures, user-friendly debugging.

49, Start / stop button is to start or stop the mounting.

New load some placement program, press the button once, it will automatically start running the program, during operation, press the button again, the following dialog box appears (Are you sure stop yes / no), selected according to the actual situation, if determined stopped, then click the button, if you select "No", you need to press the right "pause / Resume button", of course, can be selected via computer operation. (To stop running program, you can press twice) **Restarting a placement program**, press the button will appear dialog box, select the actual situation, if you want to continue to the last action, then click on the button, if you want to mount all over again, you need to press the right "pause / continue buttons", of course, you can also choose to operate on the computer.

50, Pause / continue button, use the button, pause and resume placement program in the mounting process. In the state of a single step, press button to remove the state of single-step, continuous operation.

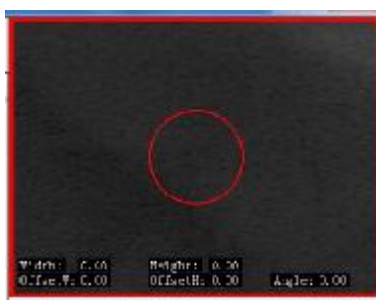
4, Emergency stop / off button, which run in the event of emergency situations, press the button, you can disconnect the power. When you run the device, you need to open the button.

4.2 Visual Window

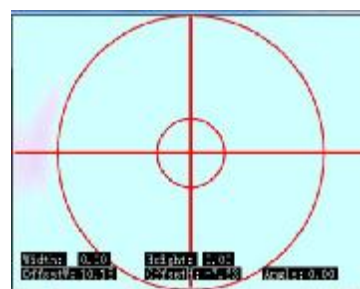
Picture 4.2.1



Picture 4.2.2



Picture 4.2.3



In the video cable to ensure normal circumstances (see 4.8 content) Double-click visual 43 window, there will be three screen switching, respectively Picture 4.2.1, Picture 4.2.1, Picture 4.2.3.

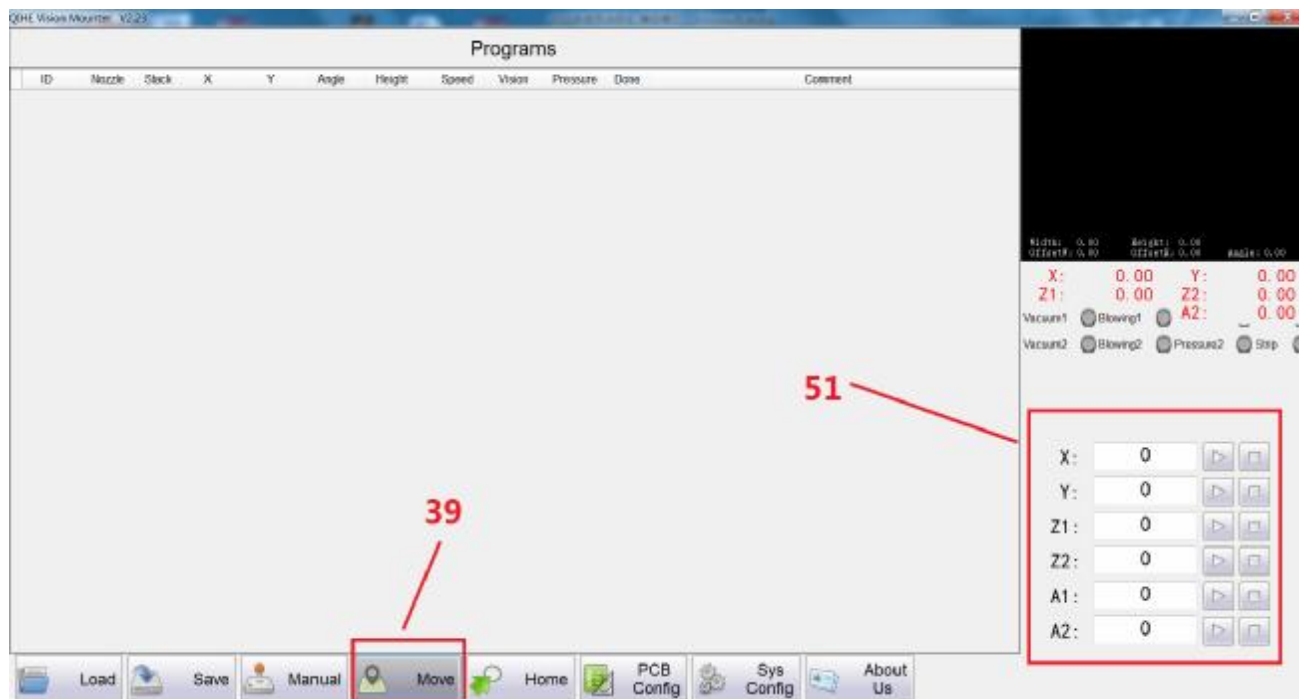
Picture 4.2.1 is a visual normal state, used to identify the chip, which is characterized by a large circle in the middle.

Picture 4.2.2 is an enlarged up visual state, used to automatically identify the nozzle deviations (see 9.4 content), which is characterized by a small circle in the middle.

Picture 4.2.3 is a bottom visual images for positioning mark point, and manually write the coordinates (see 7.2 content).

Note: remember not to let the two camera images backwards, authentication method: Switch to the screen in Picture 4.2.1, then hand over the visual camera shake, observed the picture is there any synchronization? If reversed, please replace the camera serial number (see 4.6 content).

4.3 Locating and Running



Picture 4.3.1

Click 39, positioning operation, the screen changes to 4.3.1, the 51 in the box for positioning mode of functional areas.

In the "X": behind the box, enter the specified coordinates, placement head 3 moves to the corresponding position.

In "Y": behind the box, enter the specified coordinates, placement head 3 moves to the corresponding position.

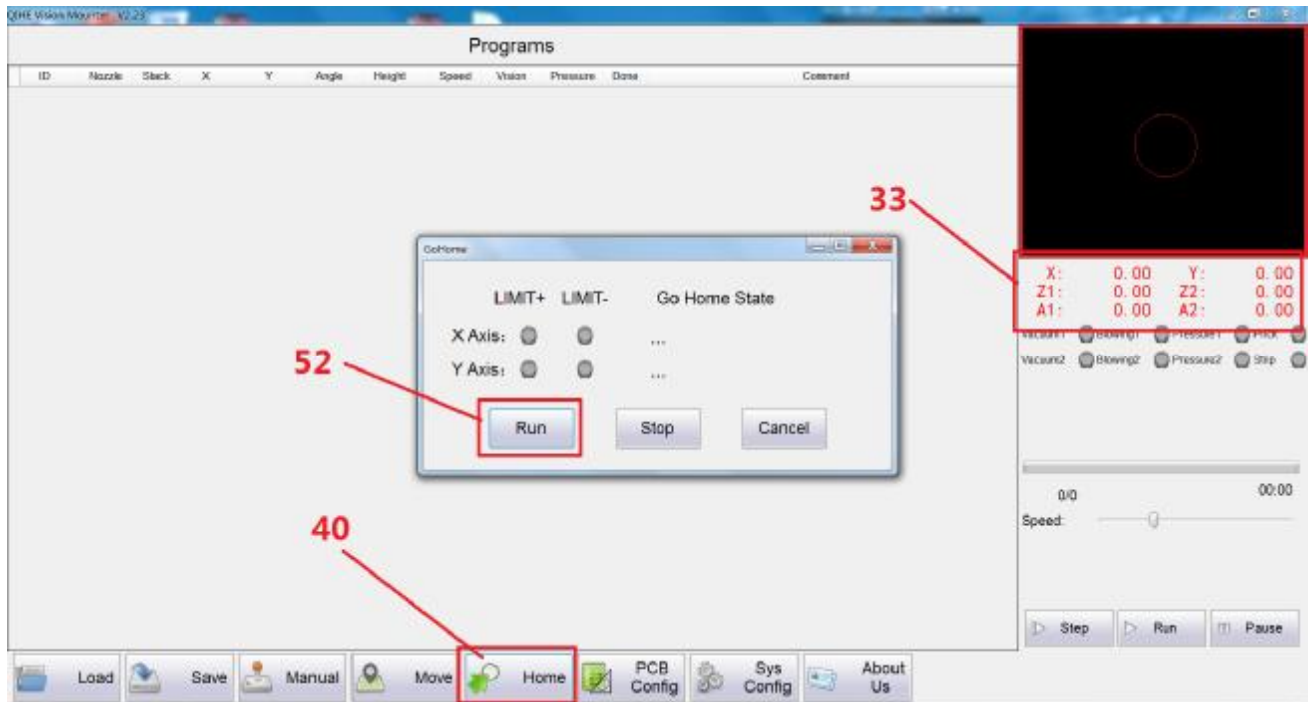
In "Z1": behind the box, enter the specified coordinates, the nozzle A will drop to the corresponding height.

In "Z2": behind the box, enter the specified coordinates, nozzle B will drop to the corresponding height.

In "A1": behind the box, enter the specified coordinates, the nozzle A will be rotated to a corresponding angle.

In the "A2": behind the box, enter the specified coordinates, the nozzle B will be rotated to a corresponding angle.

4.4 Origin Location

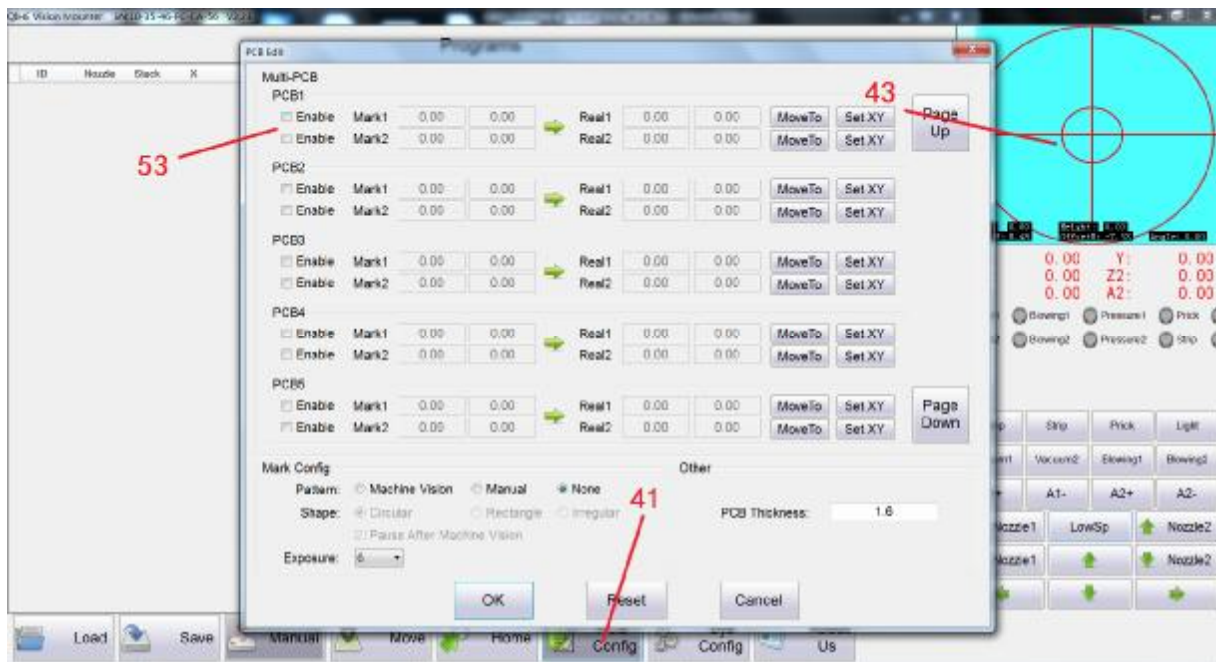


Picture 4.4.1

Click 40, the home position, screen will switch to as shown in Picture 4.4.1.

Block 33 area, digital display in red, indicating that coordinate information has not been produced, does not have the operating conditions, can only operate in manual mode, then click 52, Start function key, head 3 will automatically return to the origin, this time to ensure that the device table no foreign matter, in order to avoid a collision. Origin successful positioning, block 33 area font into black. Represents the origin of the positioning is successful, the device generates coordinate information, at this time to close the dialog window 52.

4.5 PCB Set



Picture 4.5.1

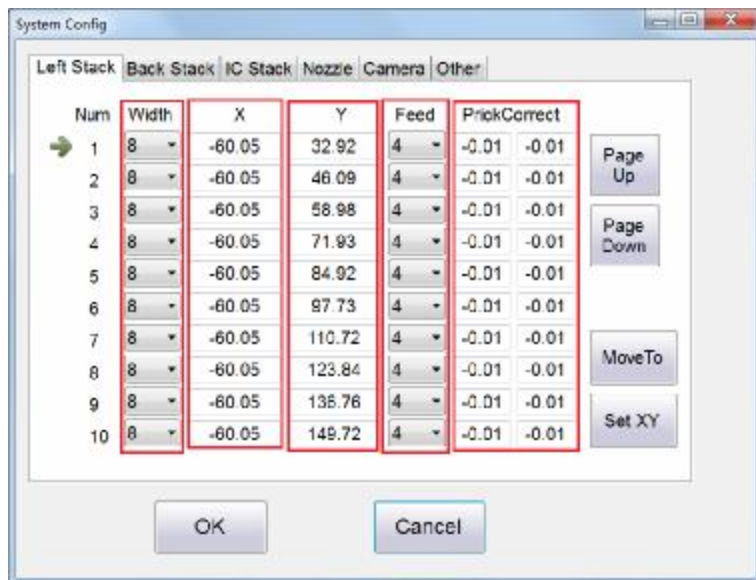
Click 41, PCB configuration, the screen will switch to as shown in Picture 4.5.1, 53 pop-up dialog window, automatically switch to manual operation mode, the video window 33 will switch to the next visuals picture.

PCB 1, PCB 2, PCB 3 PCB 50, it represents the number of makeup, can be set up 50 makeup

If only mount one PCB board, no make-up, just write the contents inside the circuit board 1.

Specific mode of operation will be described in detail in 6.6 content.

4.6 System Settings



Picture 4.6.1

Click 42, system settings, a dialog window will appear like Picture 4.6.1

Stack material No. 1, No. 2 corresponding to 5, the position of the left side of the feed trough.

Width represents the width of the strip, 802A left feed trough have 22 *8mm, 3*12mm , 16mm*1. 802B the left feed trough have 20* 8mm, 12mm *3, 1*16mm.

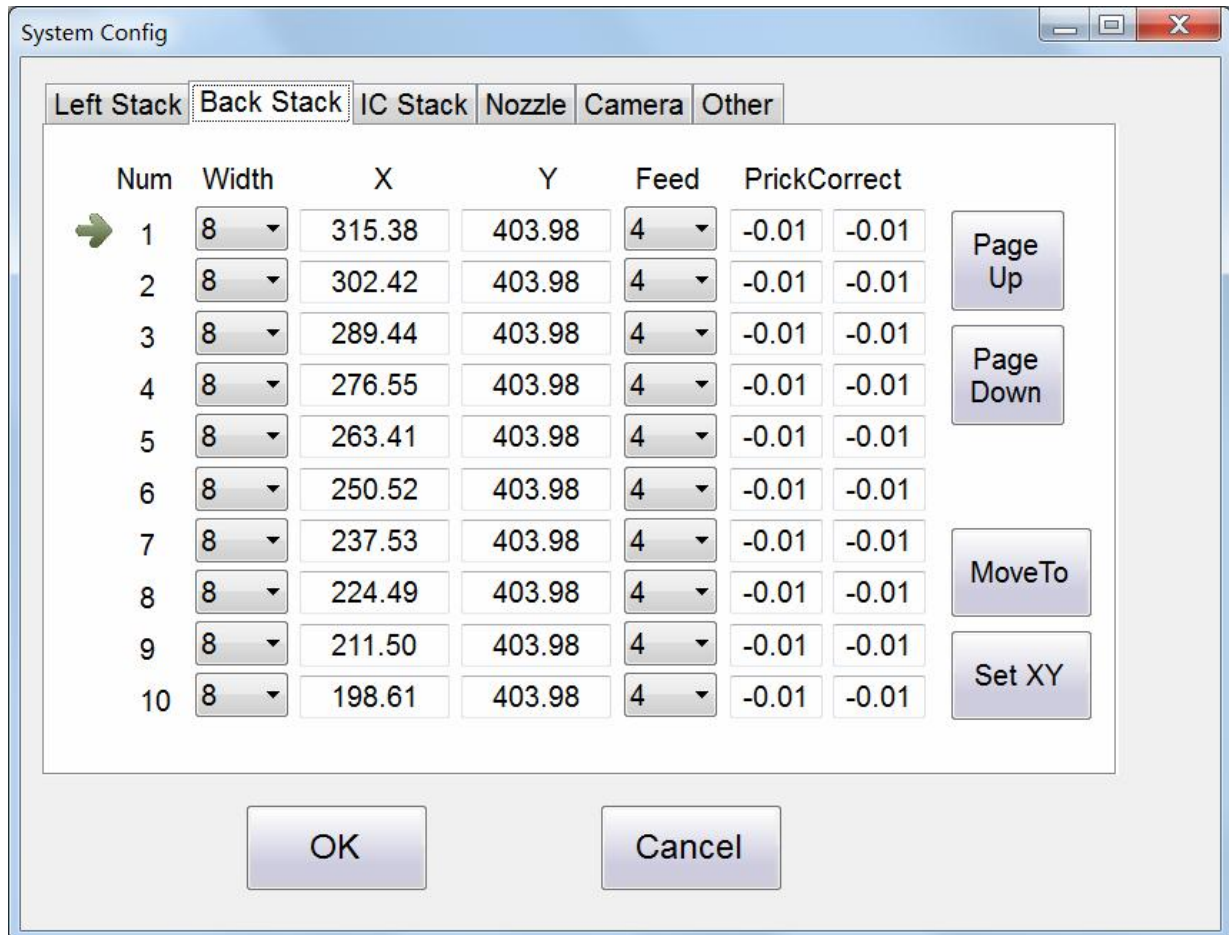
X coordinate, indicates when nozzle suction, the coordinate position in the X direction, if mount components

relatively large, need to be adjusted.

Y coordinate, indicates when nozzle suction material, the direction of the coordinate Y, Suction time, Y direction suction crooked, need to be adjusted.

Feed rate, showing the coil, the distance between the two materials, usually 8mm wide tape feeding amount are 4, 0402 the amount of feed material is 2.

Prick correct: see 9.7 content.



Picture4.6.2

Top menu bar, select "back Stack"

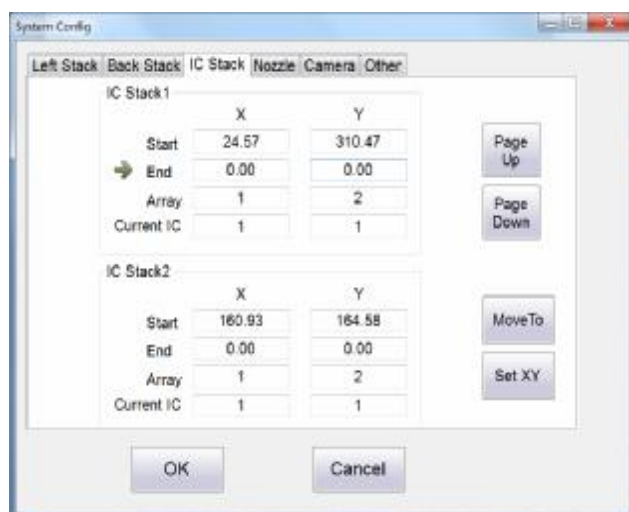
Material stack 10 corresponding to the rear side of the feed chute location folder. Stack material No. 1, No. 2 corresponding to 10, the position of the back side of the feed trough.

Width represents the width of the strip, 802A no back side of feeders. 802B the back side of the feed trough 8*18mm, 3* 12mm, 1*16mm.

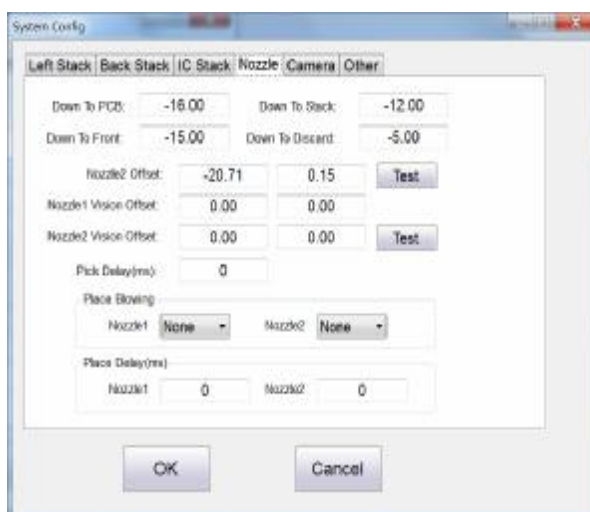
X coordinate, indicates when nozzle suction, the coordinate position in the X direction, suction time, the X-direction suction crooked, need to fine tune this coordinate.

Y coordinate, indicates when nozzle suction, the coordinate position in the Y direction, this does not require the user to adjust the coordinates, material sucked crooked and this has nothing to coordinate.

Feed rate, showing the coil, the distance between the two materials, usually 8mm wide tape feeding amount are 4, 0402 the amount of feed material is 2.



Picture 4.6.3



Picture 4.6.4

Top menu bar, select "System Tray", as shown in Picture 4.6.3, it is used to set loose coordinates, see 6.3 content.

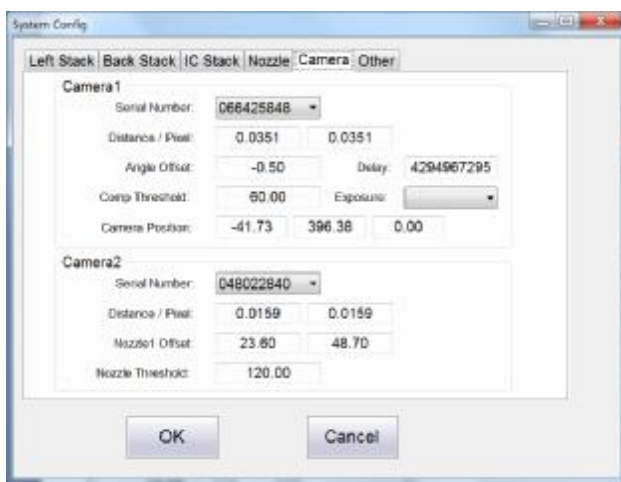
Top menu bar, select "nozzle parameters", as shown in Picture 4.6.4, observe the single-step operation, if the suction material, not put on the PC board, throw the material away. Down to the PCB distance is not enough, adjusted "down to the PCB" again. Observation of single-step operation, if the nozzle suction material, the height of decline is not enough, resulting fails, the stack down to feed distance is not enough, "down to the material stack" value adjusted again. Observation of single-step operation, if the bulk of the nozzle taken when high enough decline, resulting suction fails, the distance to the front of the drop is not enough, "down to the front," the transfer of small point value again. "Down to the reject material": When the nozzle suction, suction crooked or not sucked material, the sensor does not detect the suction, then to 28, abandoned trough position, down to the height of the set, perform a butt action, under normal circumstances, no need to adjust the data.

Nozzle 2 Offset: nozzle B represents the relative positional deviation A of the nozzle. All of this equipment is to coordinate the nozzle A subject, therefore, the nozzle of all the coordinates B, the coordinates are based on the nozzle A, with a deviation numerical value. This data can be filled manually or automatically generated. Manually fill multiple needs of customers suction repeatedly change the numerical value until the two nozzles can be sucked right material, under normal circumstances do not recommend using this method. In the factory the data are set up, customers do not need to be modified. If you need to modify the deviation, see 9.4 content.

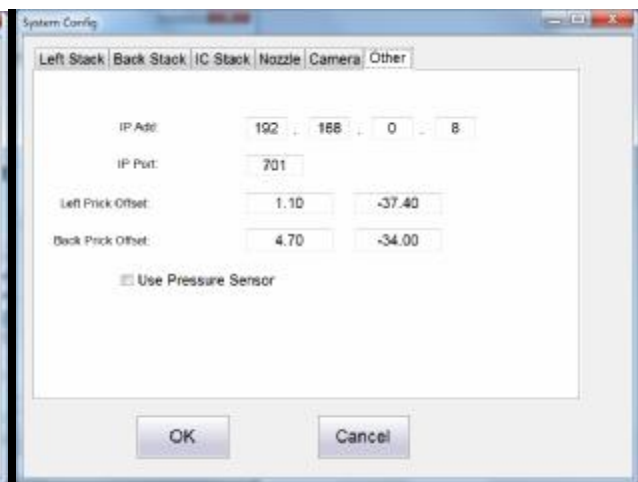
Suction delay: indicates the nozzle drops to the feed stack, suction time, this is in milliseconds. When in the factory is set to 0, user can adjust the data according to the actual mounting situation. If the nozzle air passage is normal, down to a suitable height material stack, the correct position, but can not suck material, at this time, need to increase the numerical value, numerical value large, the more obvious sense of pause.

Mounting material blowing: In mounting process, if found to chip placement when there was brought up. In the case of confirm the normal air route, select this function key, divide into: no air, small, large, three-gear. And increase the "mounting material delay."

Mounting material delay "represents nozzle is lowered onto the PCB, discharge the material time, this in milliseconds. When in the factory is set to 0, the user can adjust the data according to the actual mounting situation. If the nozzle air passage is normal, down to PCB highly suitable, and the PCB is coated with solder paste, but also the occurrence of material was brought up, then need to increase this value, greater of the value, the more obvious sense of pause.



Picture4.6.5



Picture4.6.6

Top menu bar, select "Camera Parameters", as shown in Picture 4.6.5,

Top camera: "Camera number" on behalf of the camera, if the camera is connected intact and has not been disabled the software, but the visual window can not be displayed on the visual screen, it means "Camera series number" wrong, re-select the number until the correct. "Distance / pixel" indicates the actual movement of the machine and the distance to the camera than the distance of recognition, this parameter is normally, unnecessary to change. Only after the replacement of the up camera, then re-adjust this parameter. "Angle offset" chip stick crooked , we need to adjust this parameter (see 9.8 content). "Capture delay", in the case of the visual over the patch, camera screen appears smear phenomenon, need to increase this value. "Component Threshold": see 9.2 content. "Camera Exposure" on behalf of the visual light or dark the screen, the smaller value, the brighter picture, the greater visual over the disruption. "Camera coordinate", in the factory is set up, users do not need to modify, after replacing the camera, then modified.

Bottom camera: "Camera number" on behalf of the camera, if the camera is connected intact and has not been disabled the software, but the visual window can not be displayed on the visual screen, it means "Camera series number" wrong, re-select the number until the correct."Distance / pixel" indicates the actual movement of the machine and the distance to the camera than the distance of recognition, this parameter is normally, unnecessary to change. Only after the replacement of the up camera, then re-adjust this parameter. "Nozzle 1 Offset", see 9.8 content. "Nozzle Threshold", see 9.4 content.

Top menu bar, select "Other parameters", as shown in Picture 4.6.6,

"IP address" and "IP port" is the address of this equipment, user is prohibited modifications.

"Left prick Offset", "back prick offset," see 9.7 content.

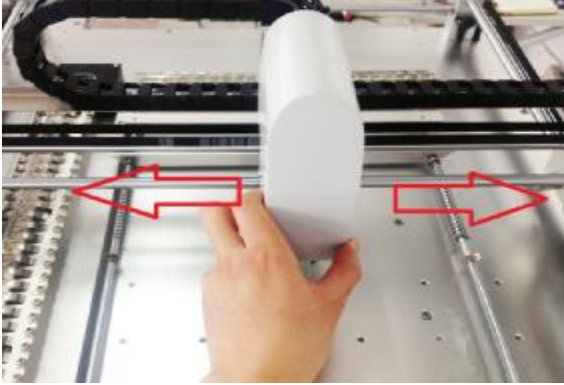
"Pressure sensor", tick the box, indicating opening pressure detection, detecting whether each suction or suction position is correct. If not, it will be throw material, repeated five times, if five times are detected failure, the machine will alarm.

Note: Some uneven surface of the component, will be mistaken for suction failed so be used with caution.

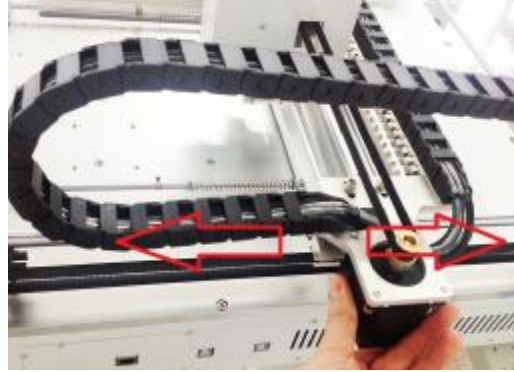
The box is not tick, means the pressure detection is closed, therefore, whether or not suction material, will conduct placement operation.

5 Read Before Using

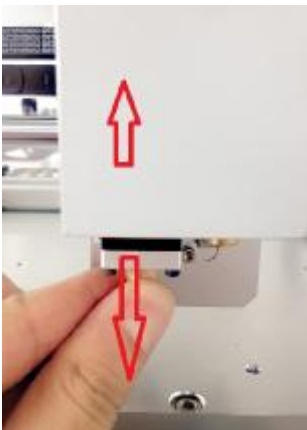
5.1 Mechanical Structure is Normal



Picture 5.1.1



Picture 5.1.2



Picture 5.1.3



Picture 5.1.4



Picture 5.1.5

As shown in Picture 5.1.1 and Picture 5.1.2, slowly moving around, to see the X-axis, Y-axis is smooth.
Picture 5.1.3, Picture 5.1.4 move the nozzle A, nozzle B up and down, to see whether smoothly.

The machine is placed according to Picture 5.1.5, see the two circles, inside the gap, check the photos in CD give to you are the same. If not, see 9.9 content.

5.2 Video Cable is Properly Connected



normal.

As shown on the left, the end of cable connecting the device and the other end connected to computer USB port.

It will automatically install the driver under normal conditions. Once connected, open "My Computer," "Device Manager", "image device", will be displayed here 2 "Video Camera", explained two cameras and computer connection is

5.3 Connected To The Computer

First, using the supplied cable, let the device connected to the computer.

The second step, to modify the computer's IP address, specific operation as follows, find the network icon on the desktop, then right-click Properties to open a window, find the directory tree on the left to find the "Change adapter settings set" OK after entering " local connection ", then right-click properties, and then enter, select " Internet protocol version 4 (TCP / Ipv4) ", and then click properties, enter a new dialog window. Select "Use the following IP address", IP address (I): 192.168.0.9; subnet mask (U): 255.255.255.0; the default gateway (D): 192.168.0.1. Then select the "Use the following DNS server addresses" and finally click OK. And close all windows.

The third step, double-click the software, you can control the computer.

Note: At this time some protection software will prevent computer camera turned on, it will pop up a dialog window, click to select Allow the camera turned on. As shown in Picture 5.3.1.



Picture 5.3.1

5.4 Check Each Function is Normal

Need to open the equipment to manual operation mode.

Need to detect function: the nozzle A gas road, nozzle B gas road, the steering nozzle A, steering nozzle B, the nozzle A running up and down, the nozzle B running up and down, run around the mounting head around, up and down the prick movement, prick signal, reel movement (see 4.1 content).

X + X- limit signal, Y + Y- limit signal: iron plates one by one on the limit sensor (14, Y + limit; 15, Y- limit; 17, X + limit; 18, X- limit bit) in the middle position, the PC software will hit the limit alarm occurs, you can turn off the alarm.

Visual screen switches, double 43, visual window, three screen can be switched, it means camera normal.

5.5 Home Position Return

Finally homing (see 4.4 content)

This equipment check is complete, all functions intact, normal operation can run.

6 Necessary Skills Before Mounting

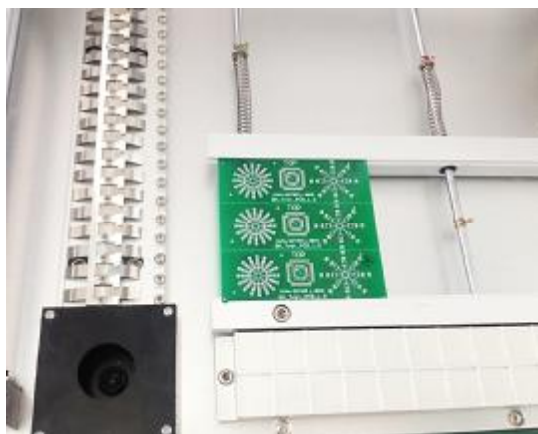
6.1 Tray Installation



Picture 6.1

Shown in Picture 6.1, put the reel 60 between the three positioning axes 61, strip pull over from the below to shaft 62, the material passes through the stack 57, screws 58, through the shaft 59, nylon belt material pull the opposite direction through the shaft 56, and then fixed to the reel V groove 54, by adjusting the U-shaped groove 55 of the pressure inside the top wire wheel to adjust the damping volume, above the feeding process.

6.2 PCB Installation



Picture 6.2.1

Picture 6.2.1 is installation for 802A PCB board.

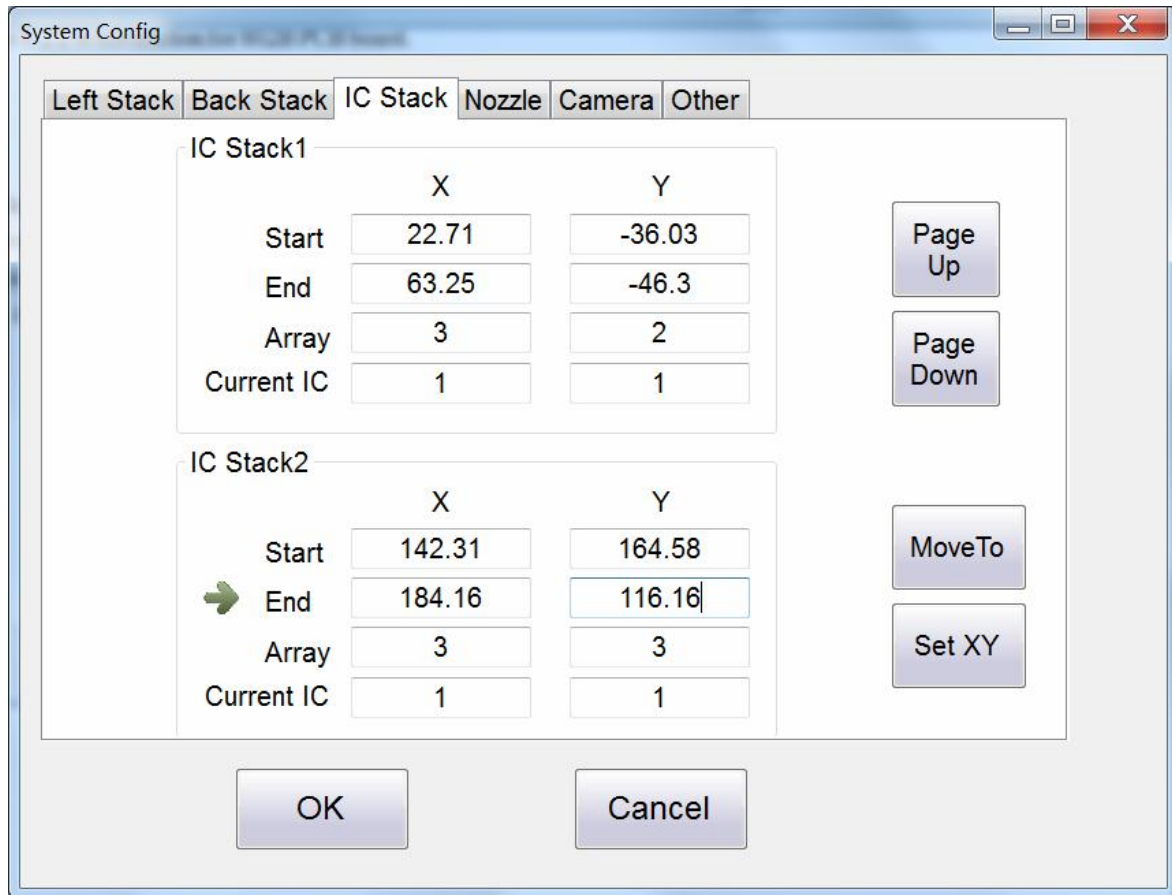


Picture 6.2.2

Picture 6.2.2 is installation for 802B PCB board.

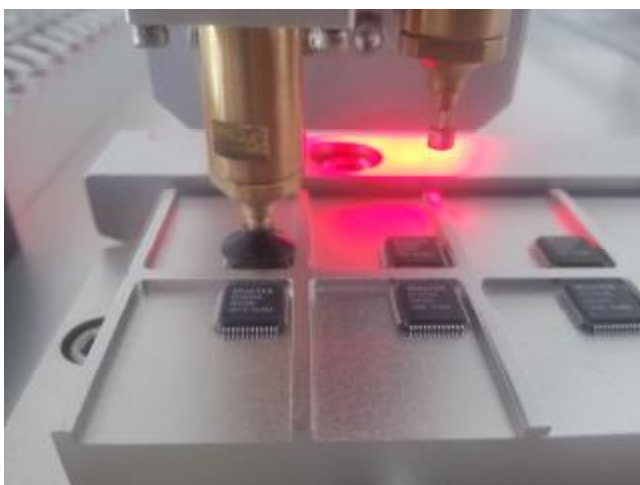
6.3 Front-Stack Material Coordinate Set

In the actual mounting process, some material in bulk, this time, we need to use this feature of the front-stack materials.

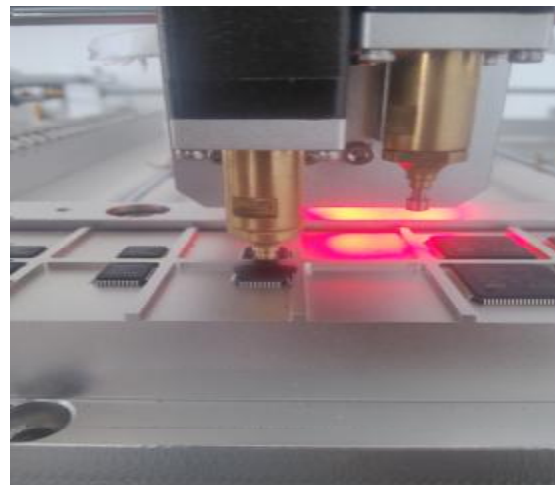


Picture 6.3.1

Picture 6.3.1 is front-stack material coordinates set interface. From tray 1, tray 2 .. tray 30, as long as the space is large enough, you can set 30 different bulk materials.



Picture 6.3.2



Picture 6.3.3

We set the coordinate inside picture 6.3.2 six chips :

The first step, manual operation, nozzle moved to top of the first IC (see Picture 6.3.2 below), on the computer, move the cursor to Picture 6.3.1 inside, tray 1, the start position, then click the set XY, automatically

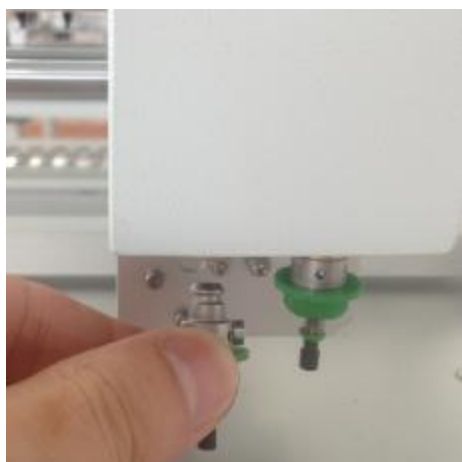
generate the starting point coordinates.

Second, the nozzle move to directly above of IC (Picture 6.3.3 below), on the computer, move the cursor to Picture 6.3.1 inside, tray 1, the end position, then click to set XY, automatically generating end coordinates. This line array, enter "3", "2", X direction indicates three chips, Y direction two chips (according to the actual situation, how may X-direction there have, to write the same number, how many Y direction there have, to write the same number). Finally, click OK to complete the coordinates of the chip set.

The actual placement, when the material stack selection, select "tray 1", the system will go to the appropriate location to suction the chip.

"Current position" represents next suction position, under normal circumstances, the chip is placed on the bulk tray, digital array line are a dozen or two dozen, after an interruption patch users often do not know next time, the chips starting position at which to suction, this time, just observe the "set XY" in the value, and then find the tray actual location.

6.4 Nozzle Replacement



As shown in the above three pictures, just remove or insert, complete replacement of the nozzle.

Note: The nozzle is by friction inside the magnet and fixed, long-term use, may result in loosening of the nozzle, just use the black rubber ring on the nozzle (Picture 6.4).

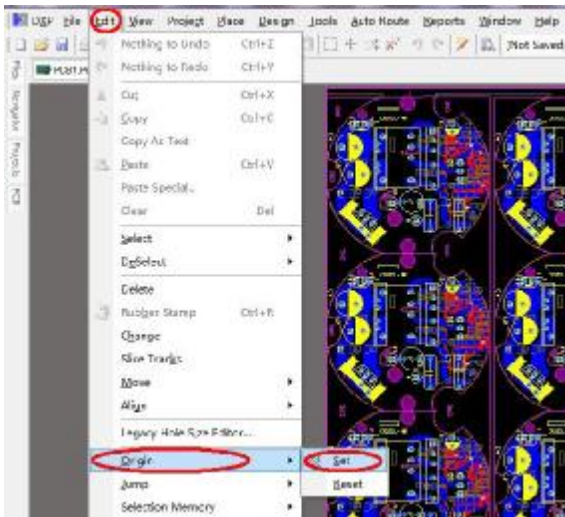
Picture 6.4

6.5 Export Coordinates

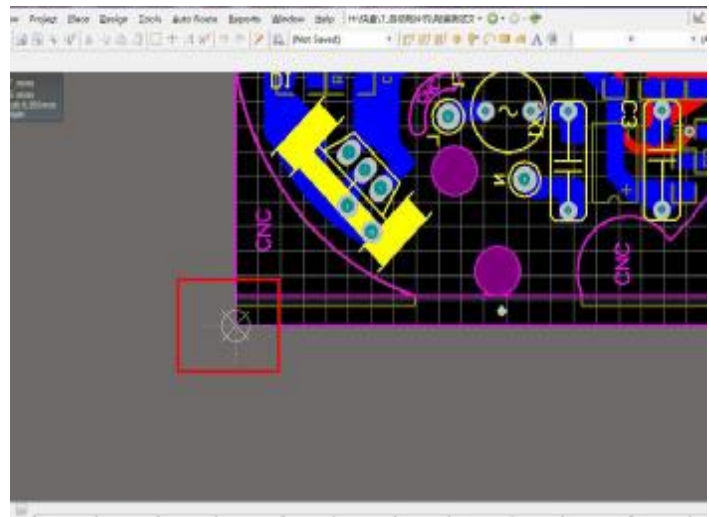
We only support protel, Altium Designer (DXP), Pands, Candes, proteus exported coordinate file, at present. Format ".CSV", because of the widespread use protel, Altium Designer (DXP), here only to explain these two ways to export software.

6.5.1 Origin Location

PCB patch need to coordinate consistent with this equipment, so the origin location to the circuit board. Protel 99 SE and Altium Designer (DXP) targeting methods are the same, so this talk about the home position under DXP and Protel 99 SE refer to this method. As shown in Picture 6.5.1, "Edit" menu select the "Origin" and then "set"; then select the lower left corner of the board as an origin (as shown in Figure 6.5.2), then you can export the coordinates step up.



Picture 6.5.1

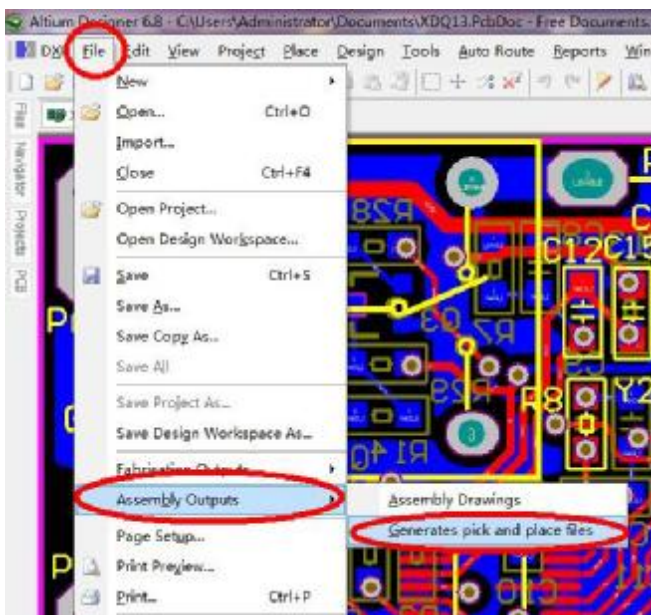


Picture 6.5.2

6.5.2 Altium Designer (DXP) Export Coordinates

The first step: home position.

Second Step: As shown in Picture 6.5.3, first left-click on "File", select "Assembly Outputs" then select "Generates pick and place files", out of the screen in Picture 6.5.4, select the format ".CSV", choose the unit "Metric." Finally, left-click to confirm, complete exporting complete file coordinates. The file extension name is ".csv", the PCB files in the same directory.



Picture 6.5.3



Picture 6.5.4

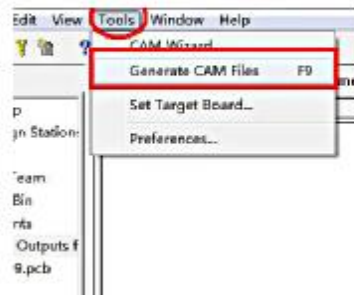
6.5.3 Protel99 Export Coordinates File

The first step: Double click to open Protel99 software, load the board needs to patch file, and proceed the home position.

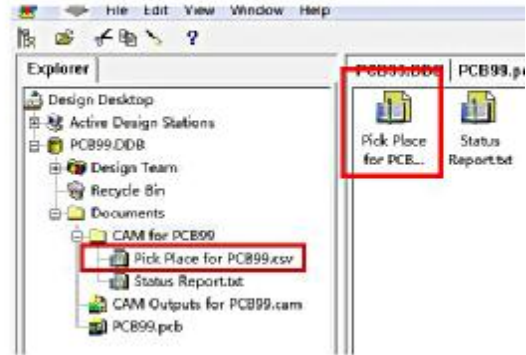
Second Step: As shown in Picture 6.5.6, left-click on "File", select "CAM Manager", the next step according to Picture 6.6.8 to complete the export coordinates, then as shown in Picture 6.6.6, Picture 6.6.7 of the shows file is found, the file suffix is ".csv".



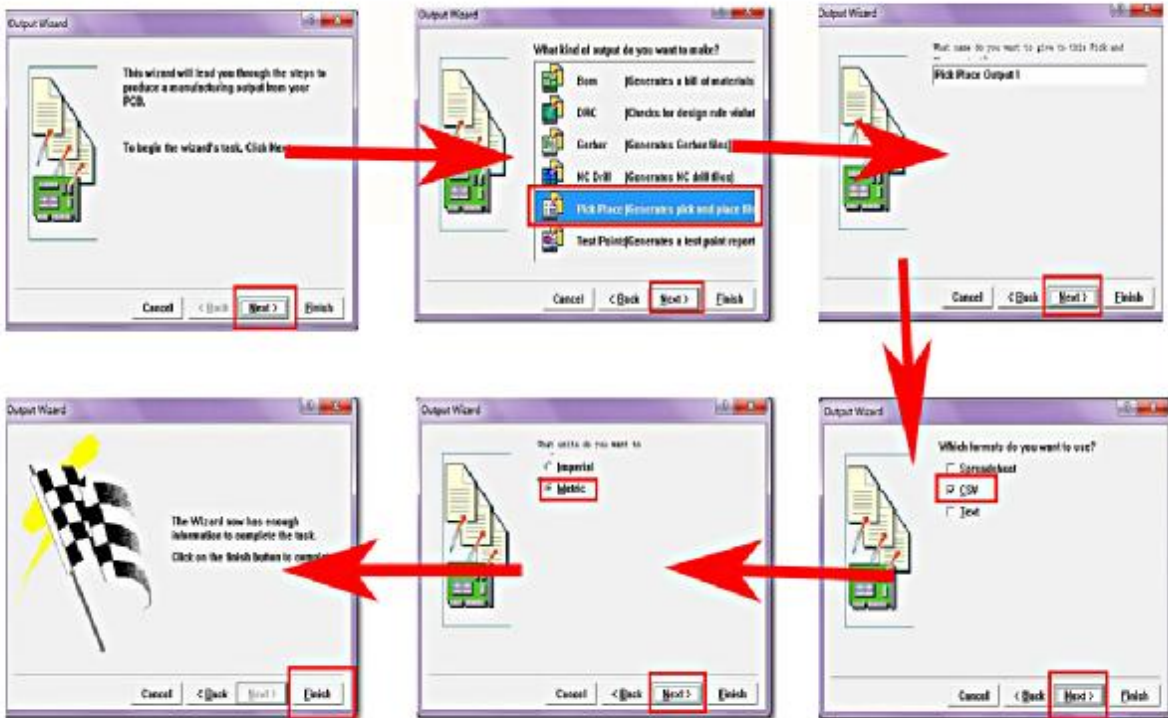
Picture 6.5.6



Picture 6.6.6



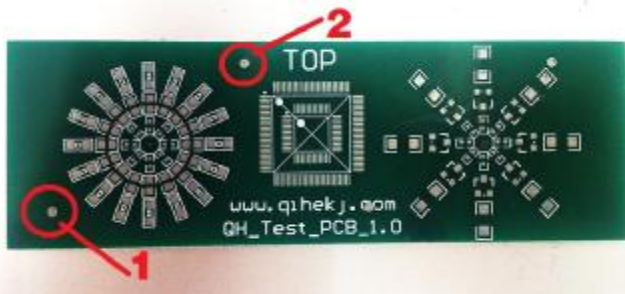
Picture 6.6.7



Picture 6.6.8

6.6 Mark Point Set

6.6.1 No Makeup



Picture 6.6.1

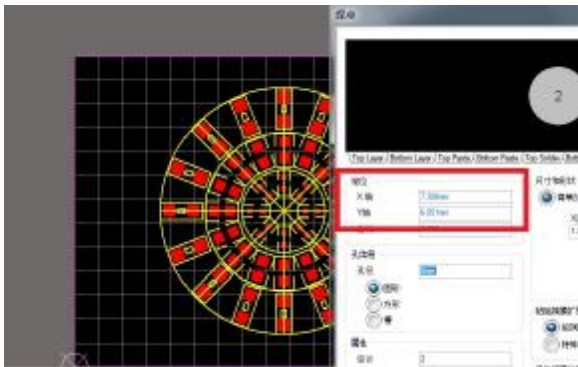


Picture 6.6.2

Picture 6.6.1 is our company's test PCB board. Picture 6.6.2 is the board PCB file.

Picture 6.6.1 two red circles, this is circuit board's mark point 1, mark point 2.

First, find the mark and recorded two points corresponding to the coordinates in the PCB file, as shown in the box 6.6.3 mark point 1 coordinates (7.306,6.051). As shown in Picture 6.6.4 mark point 2 coordinates (37.316, 29.426).



Picture 6.6.3

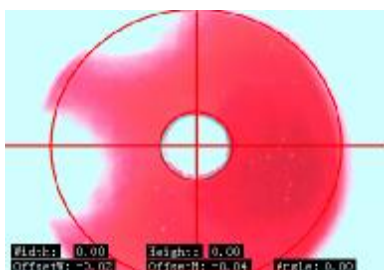


Picture 6.6.4

The second step, open the software, and loads this PCB board coordinate information (guided by the csv file format), and open the PCB configuration. As shown in Picture 6.6.5, enter the coordinates mark points 1 and 2.



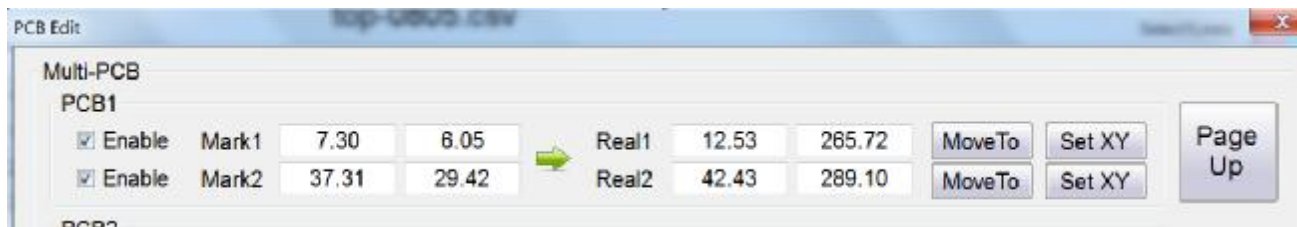
Picture 6.6.5



The third step is to manually move the mounting head, bottom visual camera aim to the camera at the mark 1, as shown in Picture 6.6.6, if standard mark point, no other devices interfere with the pads, within the field of view camera,

probably that is aligned, then click on the "actual coordinates 1" near the "XY

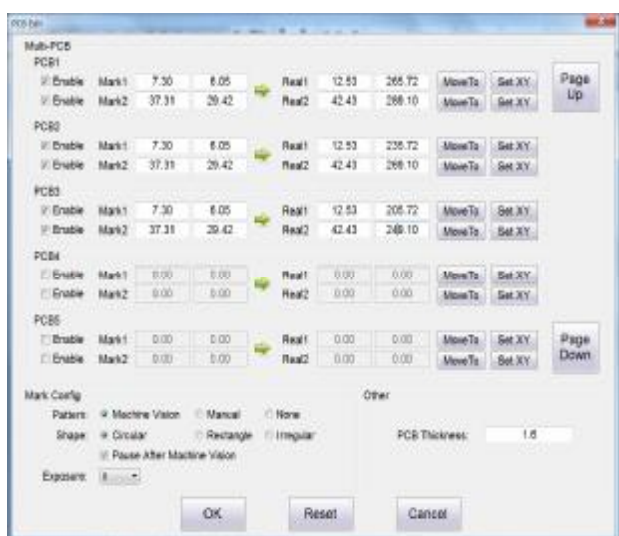
set" will automatically enter the actual coordinates of the mark point 1. Similarly, input mark point 2 (see Picture 6.6.7). Note: After setting, click OK to save the content, and then click 32, save the file, save it to CSV file, make sure that next time you open you can use it.



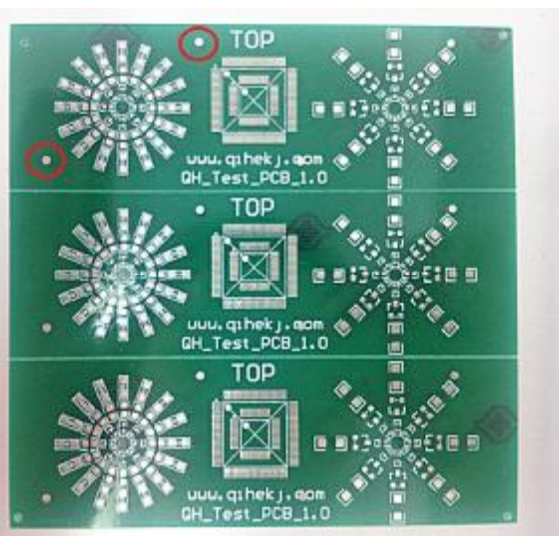
Picture 6.6.7

Analyzing mark point input is correct or not: two mark points drawing coordinates X coordinate subtract approximately equal to the actual coordinates X subtraction.
 Y coordinates of the two mark points drawing coordinates subtract approximately equal to the actual coordinates Y subtraction.

6.6.2 Makeup



Picture 6.6.8



Picture 6.6.9

Picture 6.6.9 is an example, set three PCBS.

If three PCBS, we need to check the "PCB 1, PCB 2, PCB 3" (how much PCB, you write the same number).

The first step: Put one PCB, set mark point (see 6.6.1 content).

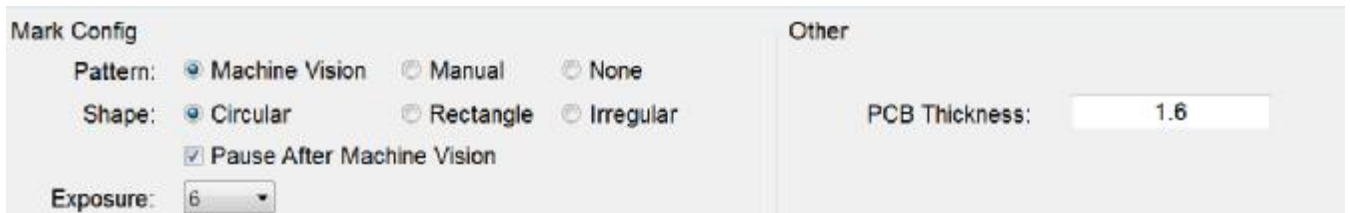
Second step: Check mark points respectively circuit board 1 and board 2.

The third step: Manually enter the coordinates of the drawing, as shown in Picture 6.6.8, drawings coordinate three boards is absolutely the same.

Fourth 4: (according to 6.6.1 the contents of the third step), manual move mounting head, make the visual camera respectively on the "circuit board 2 mark points 1, circuit board 2 mark point 2" "circuit board 3 mark points 1, circuit board 3 mark 2" (as shown in Picture 6.6.8).

Finally click OK to complete three mark set point imposition, do not forget to save the file.

6.6.3 Mark point recognition mode



Picture 6.6.10

Mark identification divide into : "automatic recognition, manually identify, does not recognize." As shown in Picture 6.6.10

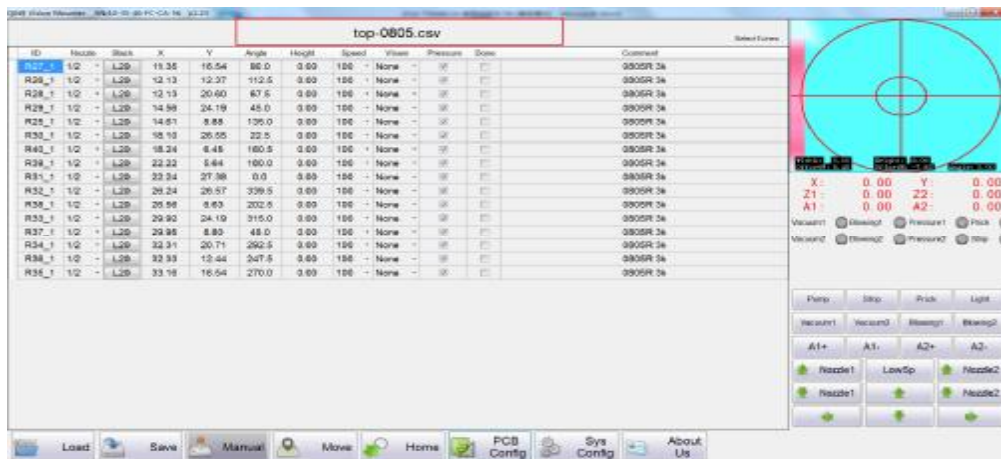
Automatic identification: If the point is standard, within the bottom visual field of view does not interfere with other devices on the pad, you can use this feature. If there are other devices within the bottom visual disturbances pad field of view, then careful with this feature. Recommended with the "after automatic identification Pause" to confirm the mark point is correctly identified.

Image recognition: recognition standards are "round." If there are other special requirements, you can select the "rectangle" or "irregular shape".

After the Automatic Identification Confirmation pause: If tick it, in automatic recognition mode, after recognition a mark point, it will pauses, waiting for manual to confirm mark is not correctly or correctly identified, next step will manually identified. If you do not tick it, in automatic recognition mode, complete identification mark point, regardless of the point mark correct or not correct, will recognition the next mark point.

Camera Exposure: different colors of the board, we need to select a different exposure. Under the interference of external light, there may need to select a different exposure. Select a different exposure according to the actual situation that allows automatic identification smoothly.

6.6.4 Mark point recognition operation

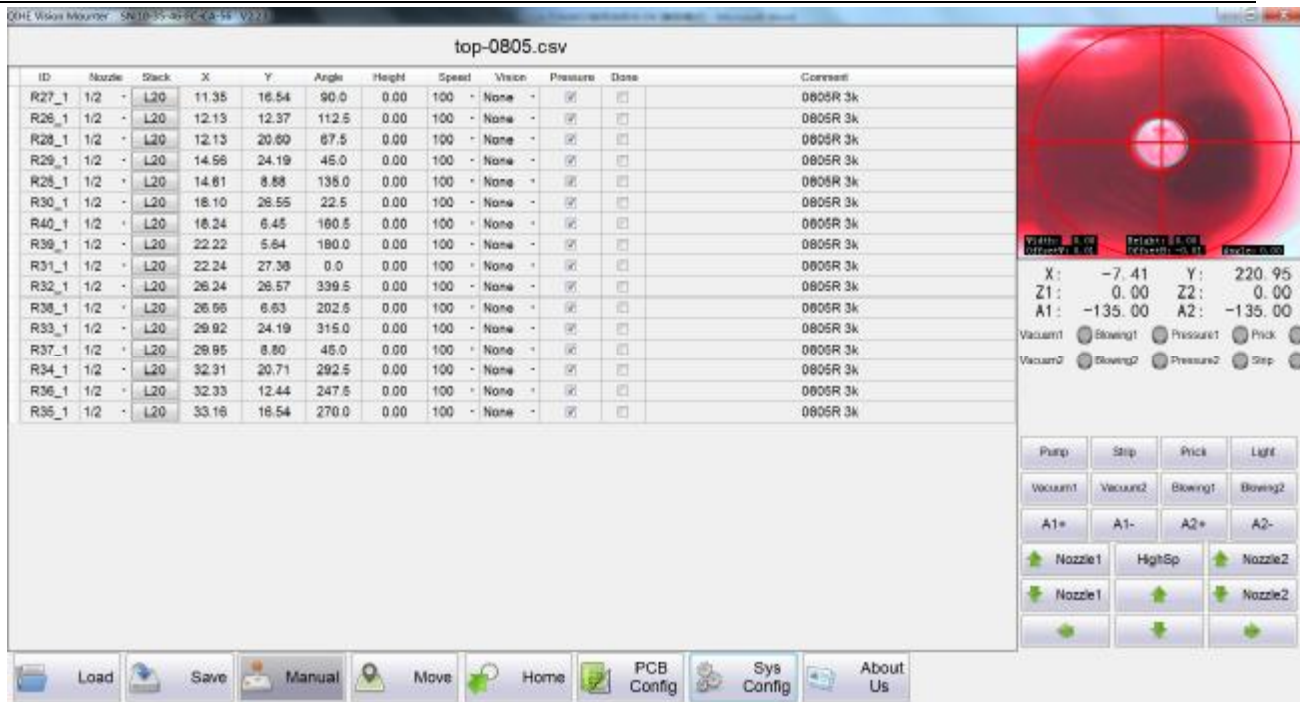


Picture 6.6.10

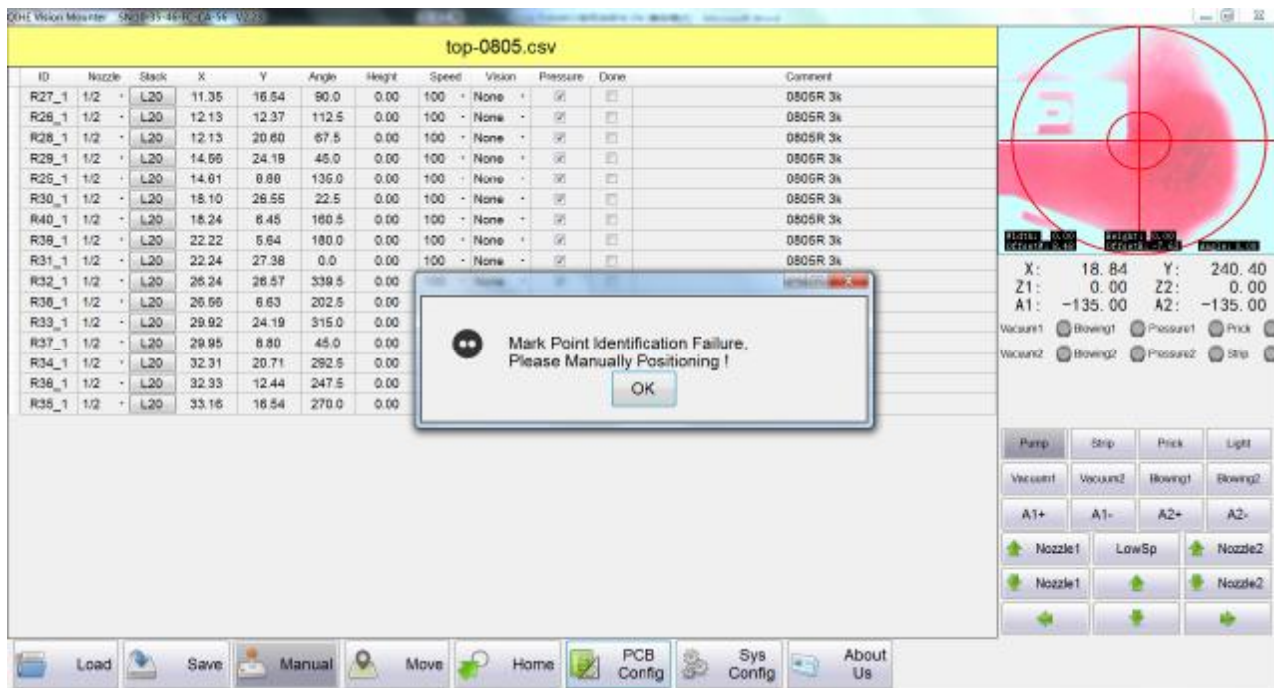
Automatic Identification:

Press 6, the single-step control buttons on the front panel, mounting heads will identify the mark point 1, as shown in Picture 6.6.10, if the box is green, it means still recognize them, users do not need to operate. If box office turned yellow, bottom visual images of the "center of the cross" and the pad center dots aligned, this represents the completion of the identification mark point (Picture 6.6.11), then press a single step, conducted mark point 2 identification, recognition is completed, you can press the "single-step" or "continue" in Mount.

Automatic visual pick and place machine

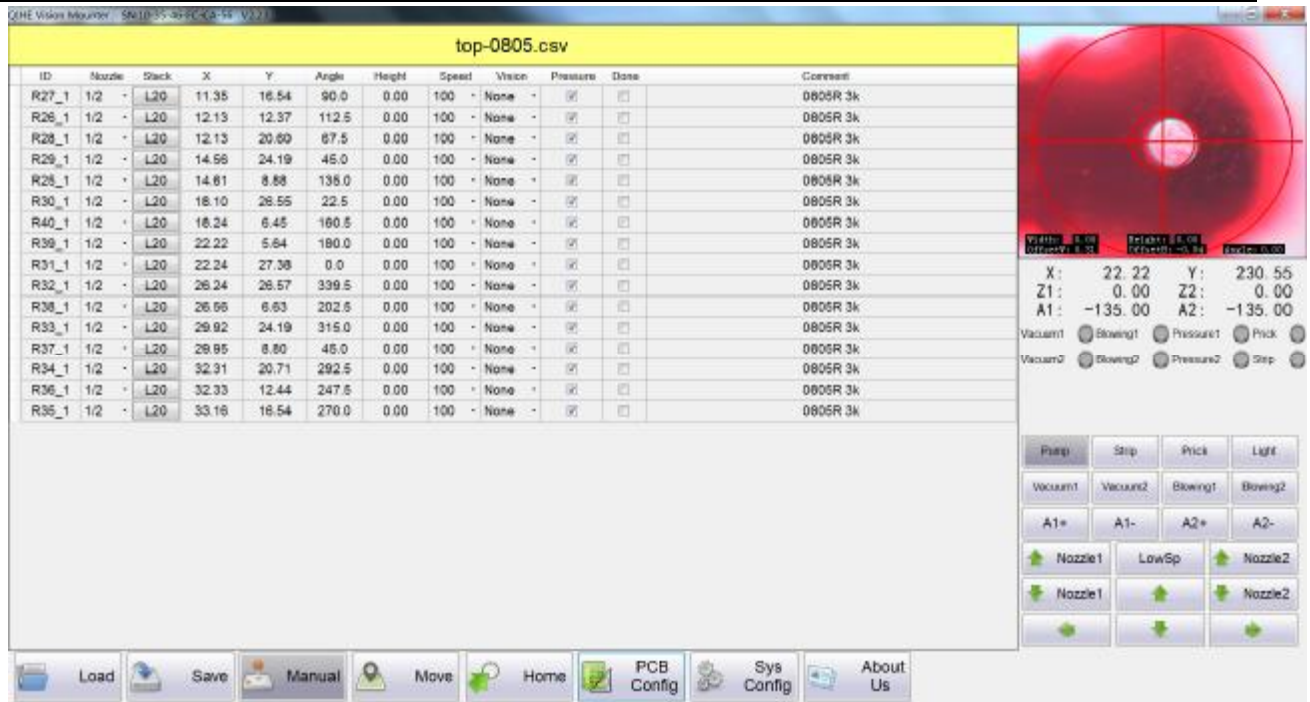


Picture 6.6.11



Picture 6.6.12

Identifying mark point in the process, the alarm sounds, display mark point recognition failure, as shown in Picture 6.6.12, state automatic identification of the mark point of failure, require manual operation, we just press OK in Picture 6.6.12 , turn off the alarm, then press the button "6 the control panel", the control mounting head movement (note the speed selector dot mode), the bottom visual images of the "center of the cross" and the pad center dots aligned (Note: It is the center of the pad, not the reaming center), and then press a single step, you can identify the next mark point.



Picture 6.6.13

Manually identify:

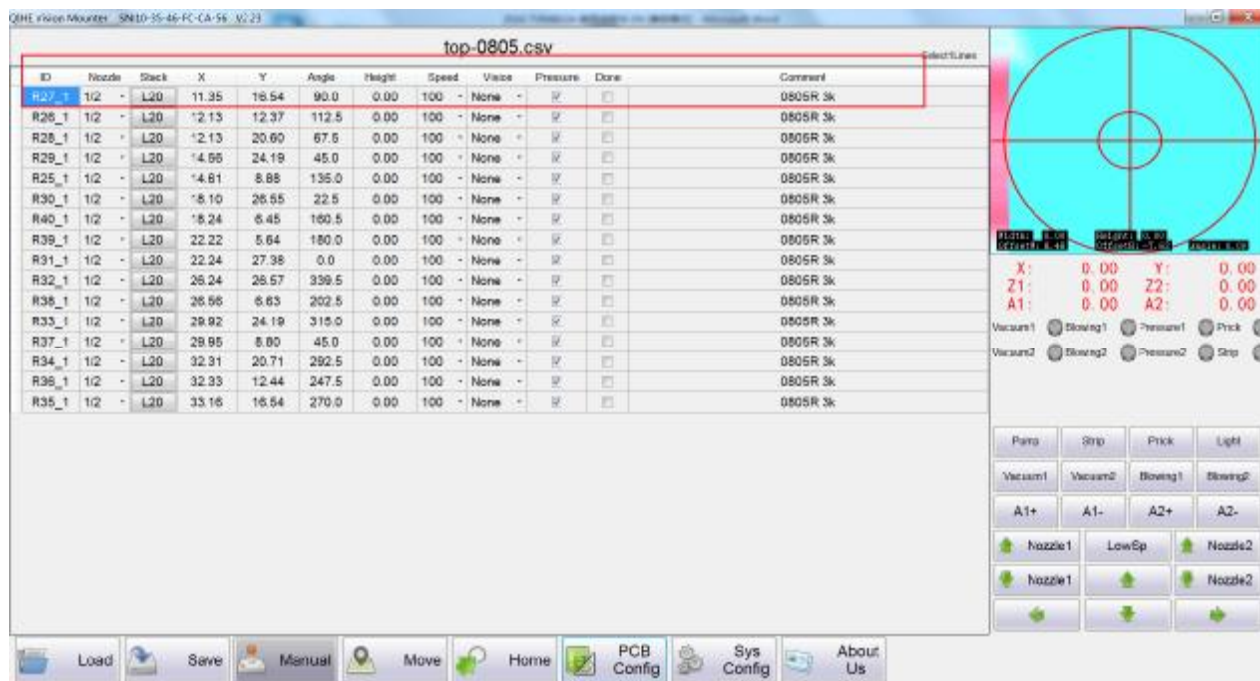
Press the "6 the control panel" single-step buttons, heads would to identify the mark point 1, as shown in Picture 6.6.13, the yellow box, mark point not aim good, which requires ourselves to manually adjust ,the button "6 control panel" the control mounting head movement (note the speed selector jog mode), the bottom visual images of the "center of the cross" and the pad center dots aligned (Note: It is the center of the pad, not the reaming center), and then press a single step, you can manually identify the next mark point.

Does not recognize:

If accuracy is not required, in order to improve production efficiency, you can choose not to recognize.

7 Program

7.1 Import Coordinate



Picture 7.1.1

First step

Picture 7.1.1 the coordinates of the user to import the file,

Users need to operate:

Remove Direct plug-in coordinates and the coordinates do not need to mount.

Select the corresponding nozzle, under normal circumstances it is the 1/2 nozzle, showing two nozzle simultaneously work.

Select the corresponding material stack number when the user install tray, you need to manually record what material level corresponds to what the chip.

Change the angle, due to the different packages, it may lead angle of 180 degrees, the chips requiring orientation, requires careful examination;

Speed selection, speed represents the speed of a single component, "35 the overall speed of the machine," to distinguish them, from ordinary resistance and capacitance speed can be selected 100%, for heavier chips, corresponding to slow down the speed, the user to adjust the speed according to the actual situation.

Height, depending on the height of the chip to fill, resistance and capacitance of these highly default 0, you don't have to write. For more than 1mm height chips need to correctly fill in, if not written, resulting in too much distance to the nozzle A drop circuit board, it may cause damage to the nozzle or Z-axis motor lost step.

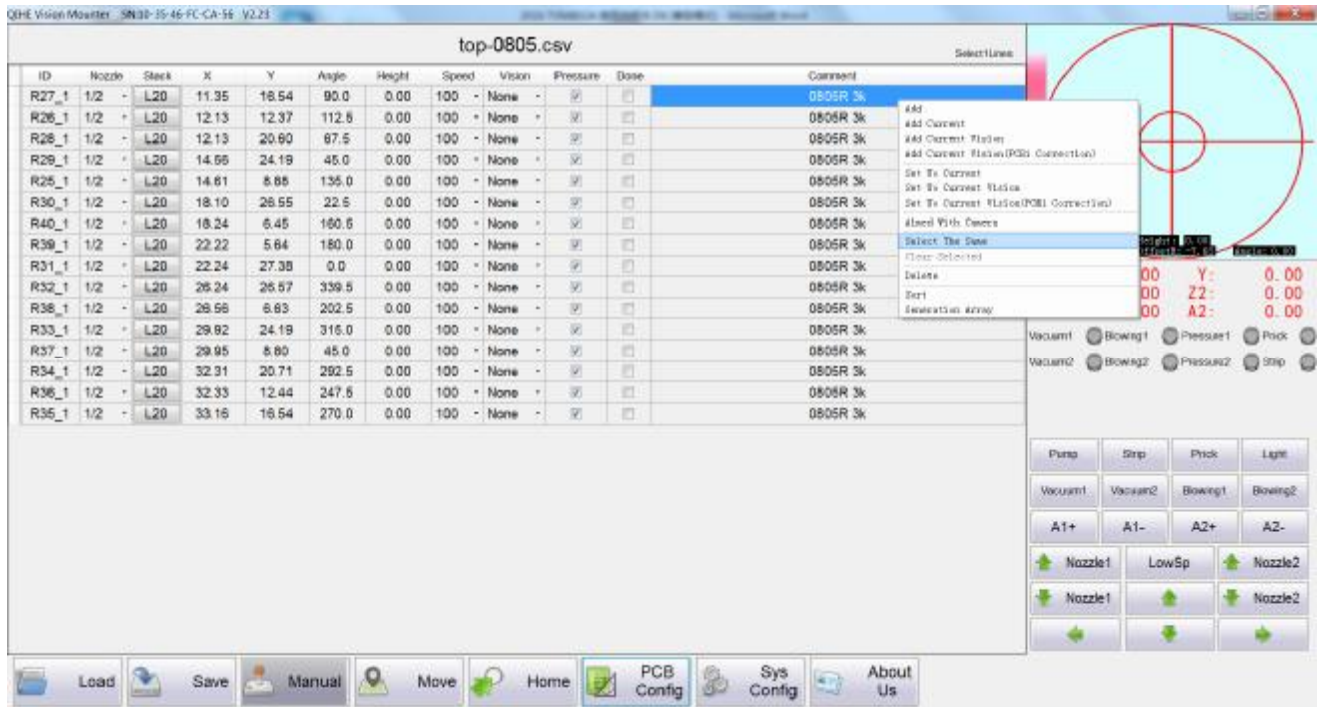
Vision, for less precision chip, you can choose not use this, to improve production efficiency; for high precision, chip and pin is relatively sparse, such as SOP-16, you can use the fast mode. If in fast mode, can not meet mounting requirements, you need to select exact.

Pressure, in the "System Settings" "Other parameters" "pressure sensor" situation checked, this feature to work. For pressure check device, to conduct stress tests, if the pressure is not checked here, not to measure the pressure.

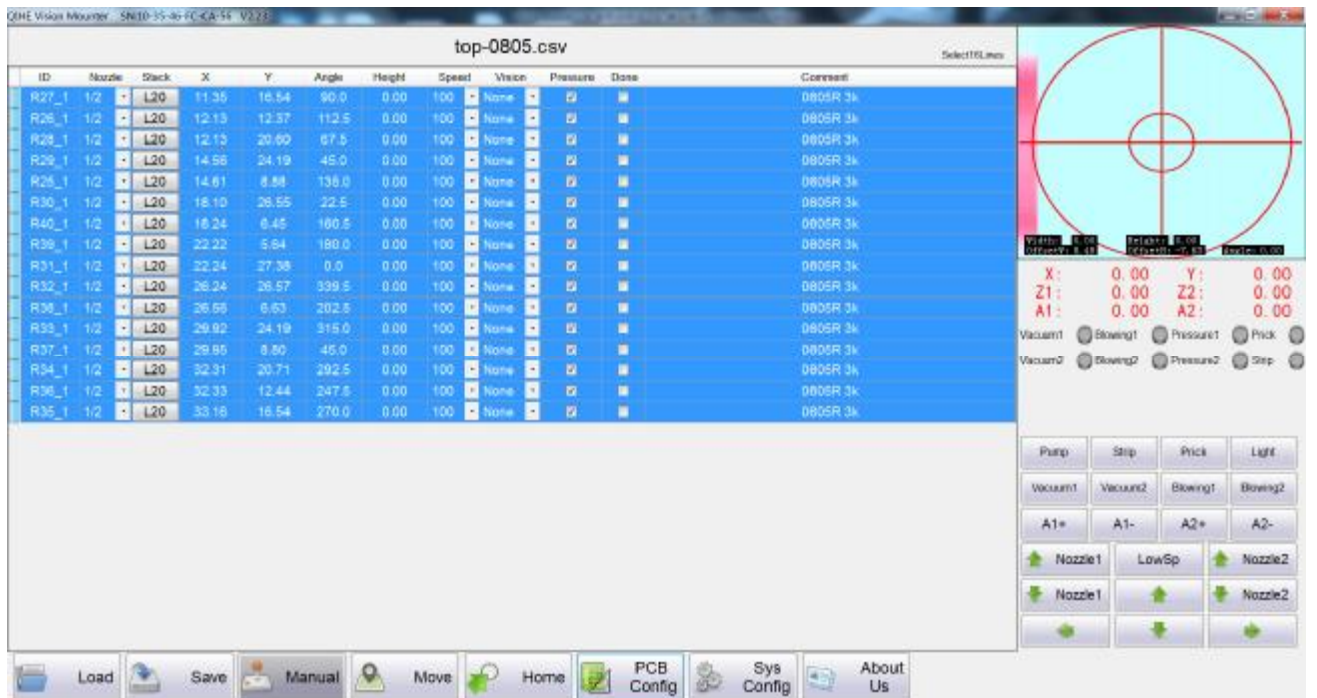
Mounted: If a component has been attached tick, indicating that the component has been mounted. This check can be added or deleted manually.

Description: This coordinate is expressed what component will be described, when the painting PCB diagram, drawing specification, can save a lot of time for programming.

Note: In the editing process, please the editing as well as preservation, to avoid accidents.



Picture 7.1.2



Picture 7.1.3

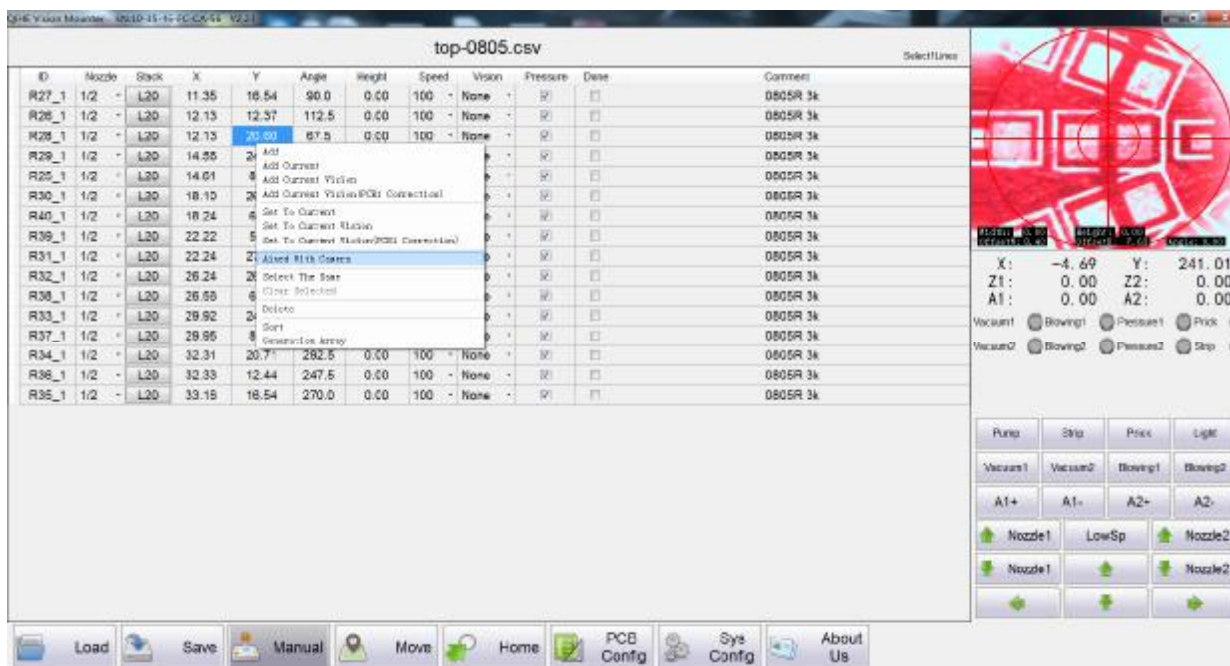
Bulk Edit, if you need to bulk edit "0402 5.1k" coordinate information, just press Picture 7.1.2, select the "0402 5.1k", right-click, then choice "select the same line." Will appear as shown in Picture 7.1.3, automatically selected contains "0402 5.1k" coordinate all information, at this time, as long as we have one of the coordinate information of a "nozzle", "material stack", "angle", "height", "speed", "vision", "pressure", "mounted" to

modify, the rest will be automatically modified.

The above is just an example of the "description" contains bulk modify "0402 5.1k" coordinate information. Users can also "number", "nozzle", "material stack", "angle", "height", "Speed", "vision", "Pressure", "mounted" make bulk modify. Method as above.

Second step

Mark set point (see 6.6 content)



Picture 7.1.4

Third step

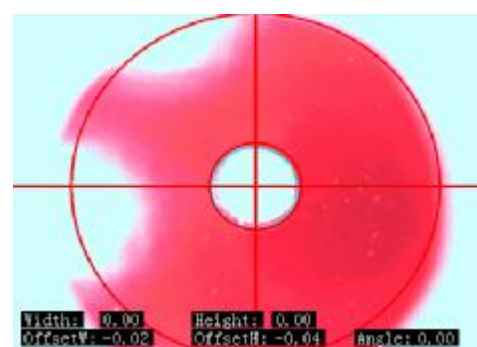
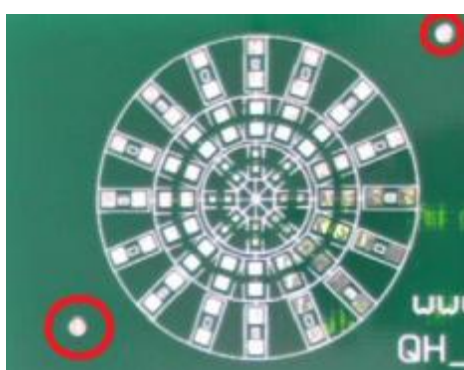
Inspection mark point settings are correct, as shown in Picture 7.1.4, select one component "X coordinate" or "Y coordinate", right click, "the camera aim" bottom vision camera will automatically go to align the coordinate information corresponding to the pads. Bottom visual window as shown in Figure 7.1.4. Users can aim coordinate several more, if all accurate, representation mark point settings are correct.

Note: Save the file, you can test mount, when user test mounted, press the "single step" button and try placed more several coordinates, if the results are satisfactory, then press the "Continue" button for continuous mounting. Finished one PCB, observation the mount position, mount the angle is correct, if no problem, you can increase the speed of production placement.

7.2 Manual Editing Coordinates

7.2.1 No Coordinate Information

If a PCB board, no coordinate file, you need to manually write coordinate information.



Picture 7.2.1

Picture 7.2.2

Picture 7.2.3

In Picture 7.2.1 this board, for example, two circle pads represent two mark points, the lower left corner of the mark point 1, the upper right corner to mark point 2. Visual window switch to the bottom visual, as shown in Picture 7.2.2. Click the manual mode, press the direction keys to move to the mark point 1 above , as shown in Picture 7.2.3. Then open the PCB configuration. Check mark point 1, and click the actual coordinates of the back of "Set XY", will produce the actual coordinate 1. Then copy the actual coordinates of the coordinate information 1 to drawing coordinate 1 inside. As shown in Picture 7.2.4.



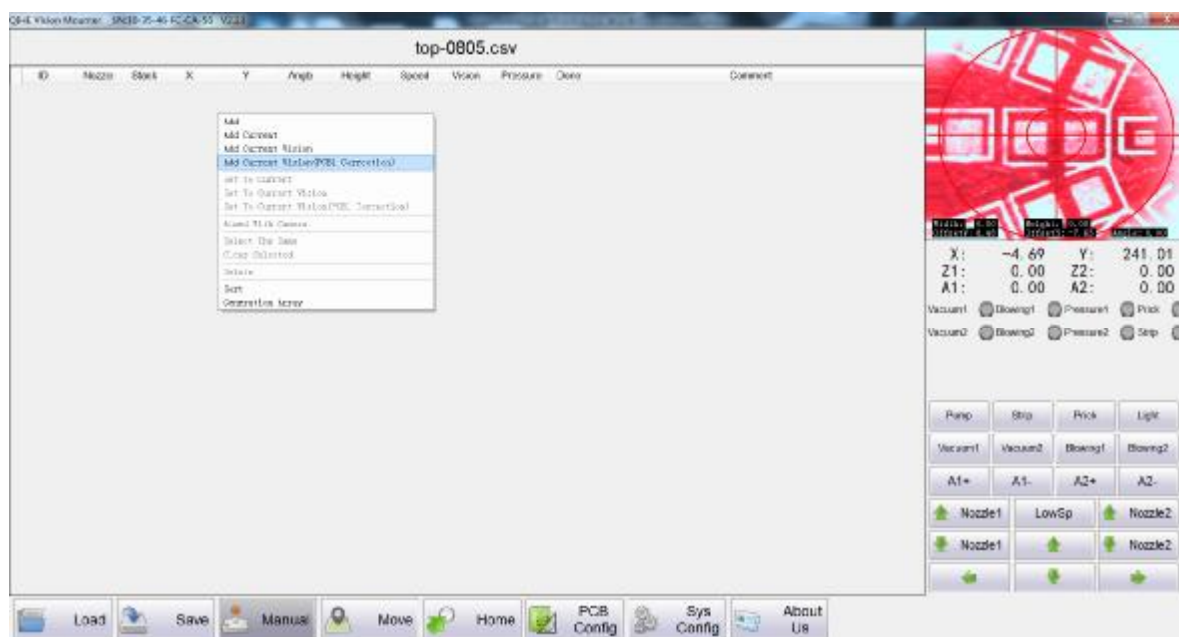
Picture 7.2.4

After set the first point mark, then press the direction keys to move to the mark point 2 above, check mark points 2, and click the actual coordinates of the back of "Set XY", will produce the actual coordinates 2. Then copy the actual coordinates of the coordinate information 2 to drawing coordinate 2 inside. As shown in Picture 7.2.5.



Picture 7.2.5

Then press to confirm. Mark set up completed, then, to set the coordinates of the component.

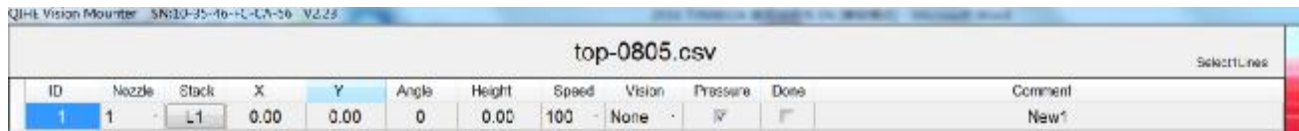


Picture 7.2.6

Automatic visual pick and place machine

First step: click on the manual mode, then press the direction keys to move to a position above the placed, visual window shown in Picture 7.2.6. Note: The pad shall prevail.

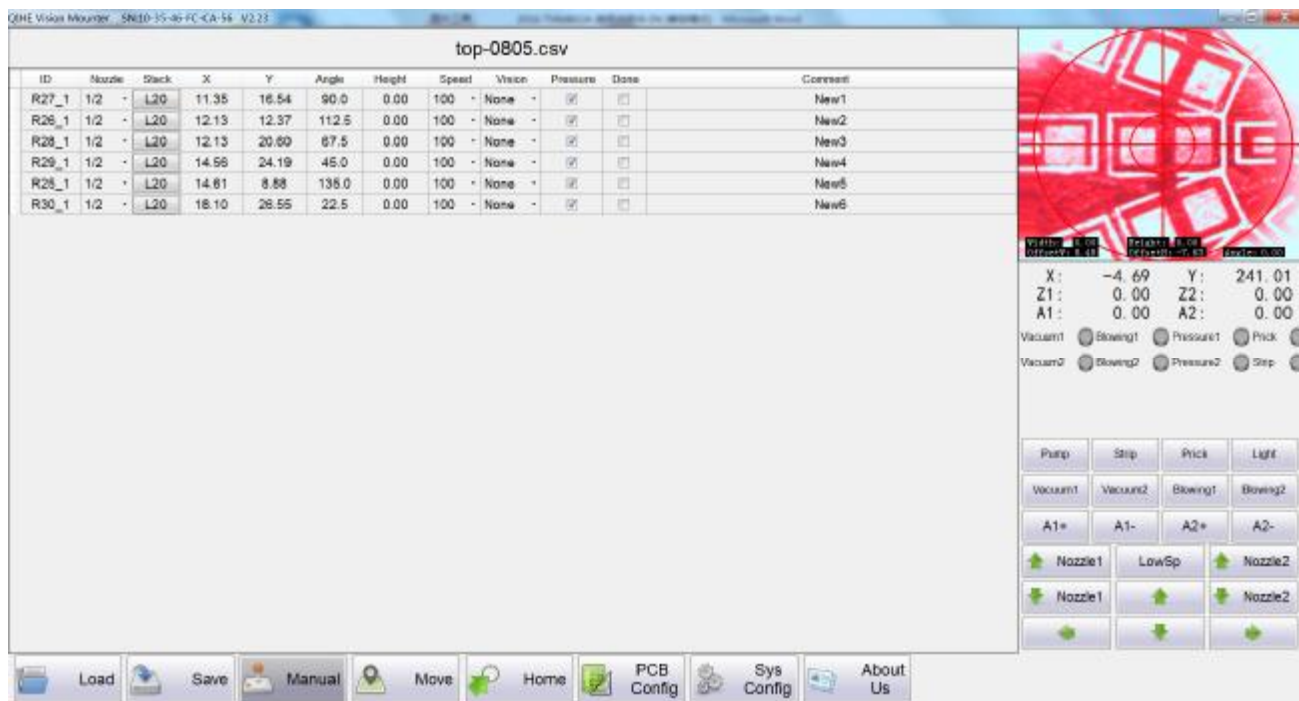
Step Two: Right-click in an empty program window, select "Add current camera position (circuit board 1 correct)" as shown in Picture 7.2.6. The system will automatically generate coordinate file, as shown in Picture 7.2.7. So, add all the coordinate information, as shown in Picture 7.2.8, then modify the generated coordinate file editing (see 7.1 content)



The screenshot shows the 'top-0805.csv' file in the software. The table contains one row of data:

ID	Nozzle	Stack	X	Y	Angle	Height	Speed	Vision	Pressure	Done	Comment
1	1	L1	0.00	0.00	0	0.00	100	None			New1

Picture 7.2.7



The screenshot shows the 'top-0805.csv' file with a list of coordinates. The table contains six rows of data:

ID	Nozzle	Stack	X	Y	Angle	Height	Speed	Vision	Pressure	Done	Comment
R27_1	1/2	L20	11.35	16.54	90.0	0.00	100	None			New1
R26_1	1/2	L20	12.13	12.37	112.5	0.00	100	None			New2
R28_1	1/2	L20	12.13	20.60	67.5	0.00	100	None			New3
R29_1	1/2	L20	14.56	24.19	45.0	0.00	100	None			New4
R28_1	1/2	L20	14.81	8.88	138.0	0.00	100	None			New5
R30_1	1/2	L20	18.10	28.55	22.5	0.00	100	None			New6

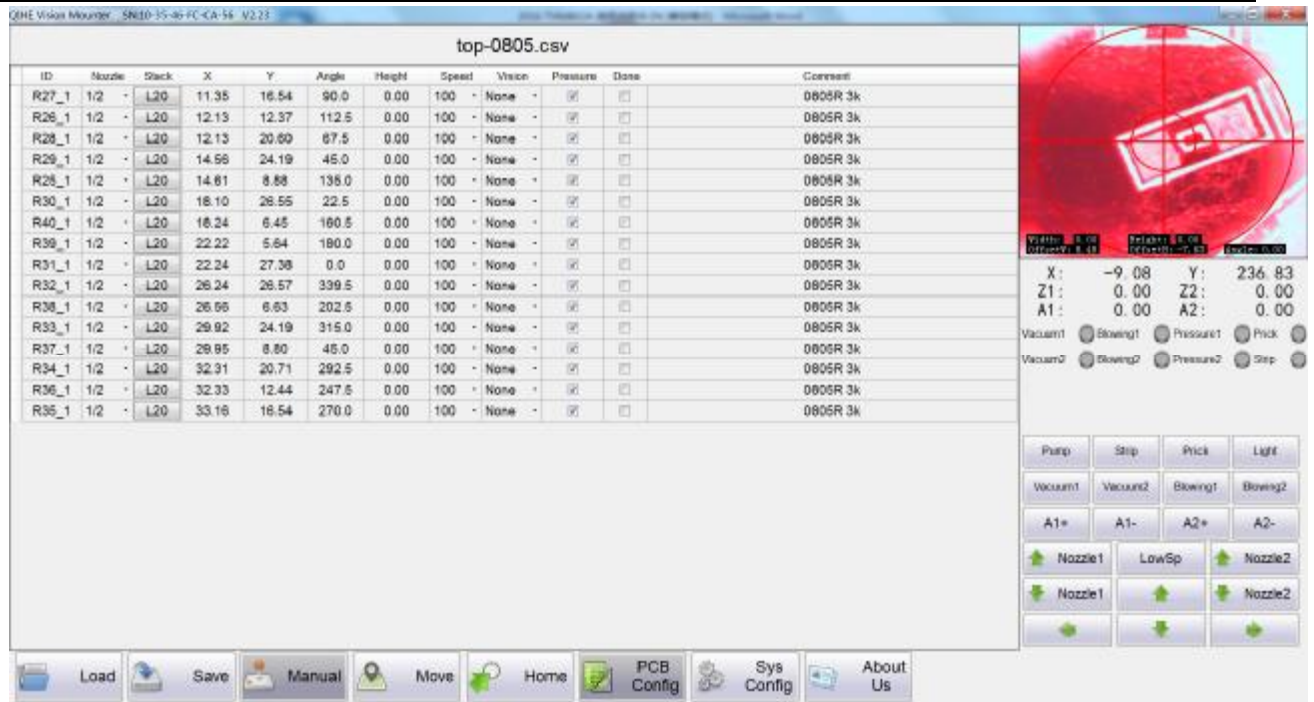
On the right side, there is a camera view showing a red grid overlay on a circuit board. Below the camera view, there are control buttons for Vacuum, Blowing, Pressure, Pick, and Stop. At the bottom, there are buttons for Pump, Stop, Pick, Light, Vacuum1, Vacuum2, Blowing1, Blowing2, A1+, A1-, A2+, A2-, Nozzle1, LowSp, Nozzle2, and Nozzle1.

Picture 7.2.8

7.2.2 There Have Coordinate Information, No Mark Point Information

First step, bottom vision alignment with the first central location of the component, observe and record (33, coordinate information).

For example, Picture 7.2.9, manually capture the coordinates of the component (-10.91, -33.83).

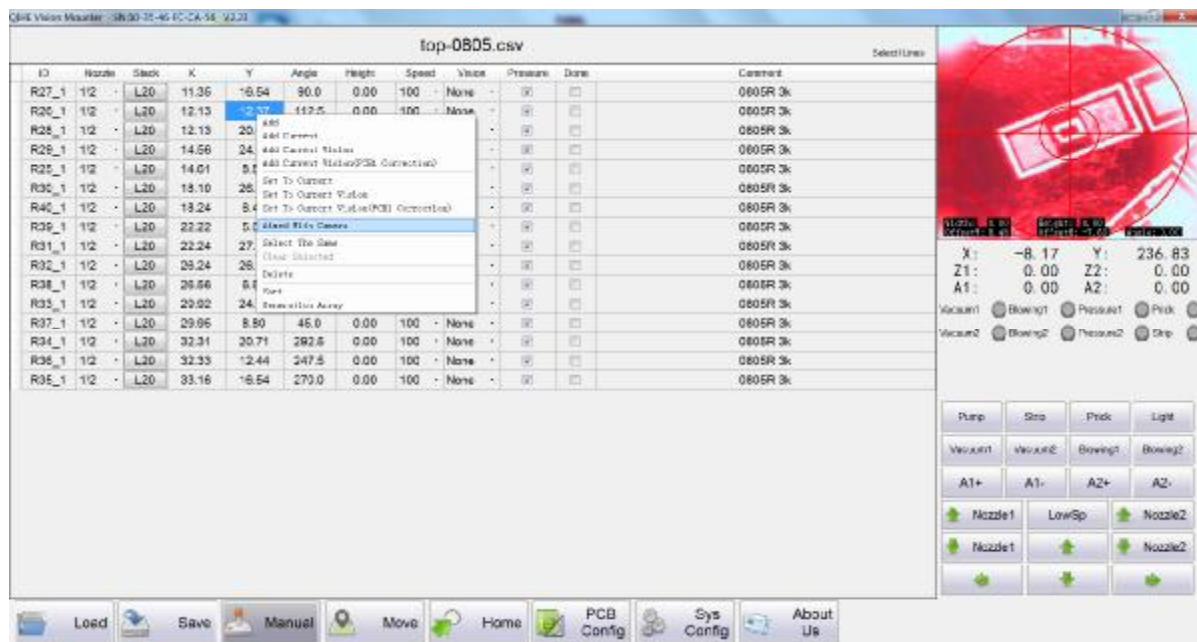


Picture 7.2.9

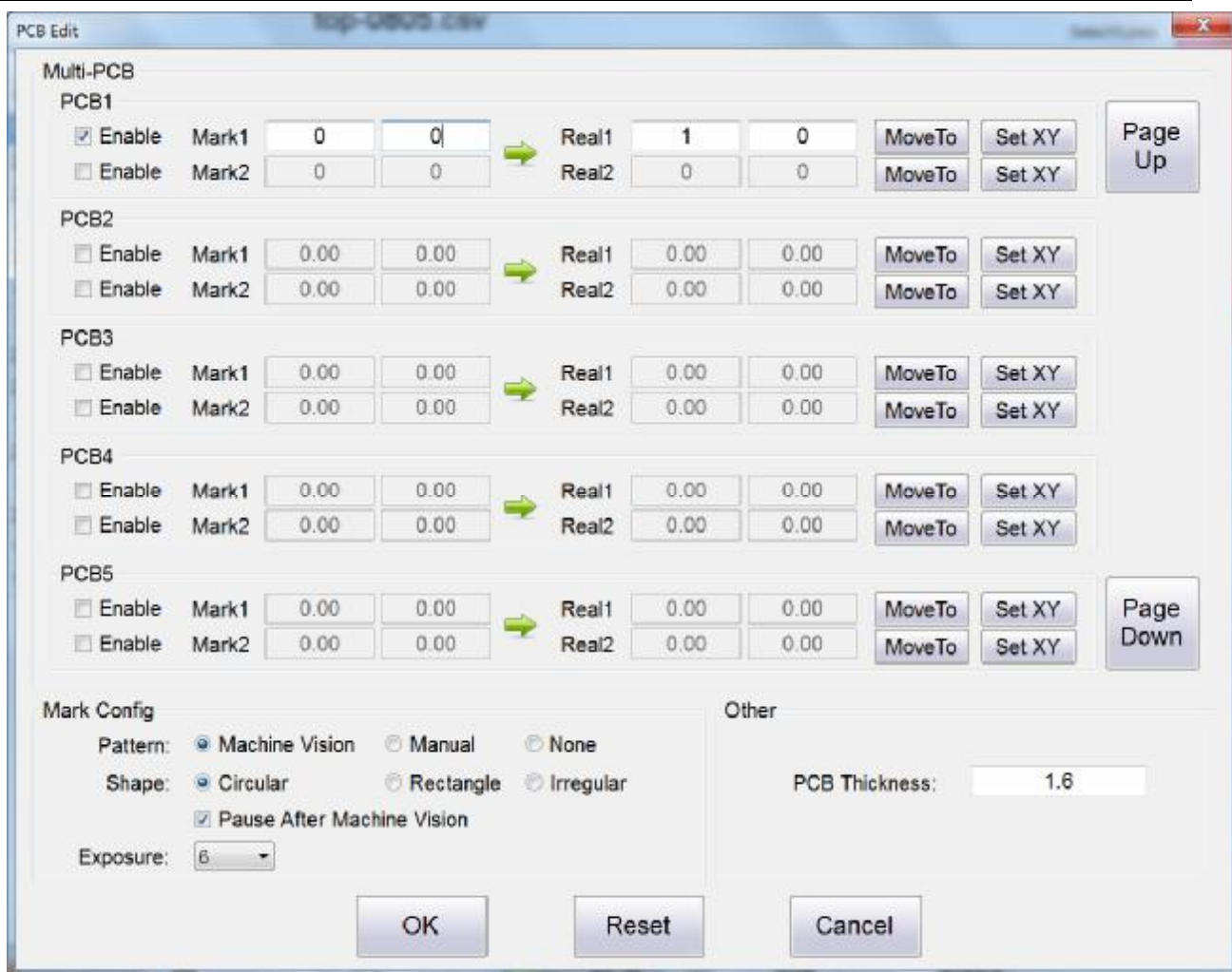
Step Two: Right-click the first coordinate component, select aim the camera, record data (-11.70, -31.85). As shown in Picture 7.2.10.

Third step: Take the difference between the two data, then record in PCB set inside, click OK. As shown in Picture 7.2.11 .

Fourth step: validation whether or not correct, you can right-click the coordinates of the first component, select the aim camera, See if it in the camera center, whether on the center of the pad.



Picture 7.2.10



Picture 7.2.11

8 Test PCB Board

Our company provides customers with a test PCB board, PCB board has two sides. In disc folder, there has a positive PCB board document, there also has the reverse side of the PCB board files, and can be mounted directly CSV file.

Users can mount test directly use csv file. (See CD-ROM)

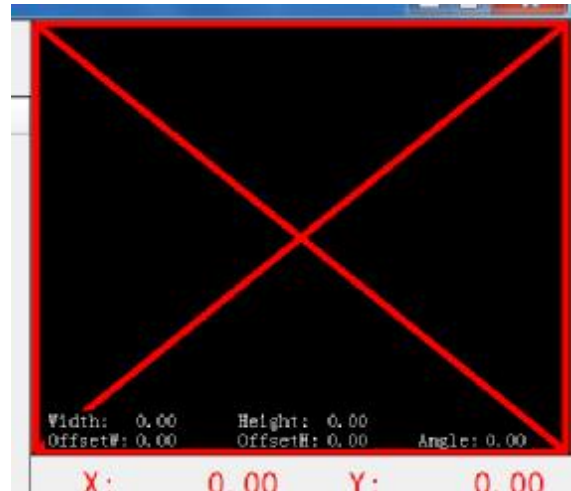
According to the above description of the contents, here come under mounting process simple and elaborate.

The first step, PCB board placed, tray installed. The second step, open the PCB board file, note, in document, the direction of the drawing to the PCB placed in the same direction. The third step is to set the origin. The fourth step, coordinates of the export file. The fifth step, loading the coordinates file. The sixth step, mark point settings, and save. Seventh step, the program editor. The eighth step, single-step test run. The ninth step, official placement.

9 Common Trouble

9.1 The Camera Can Not Recognize

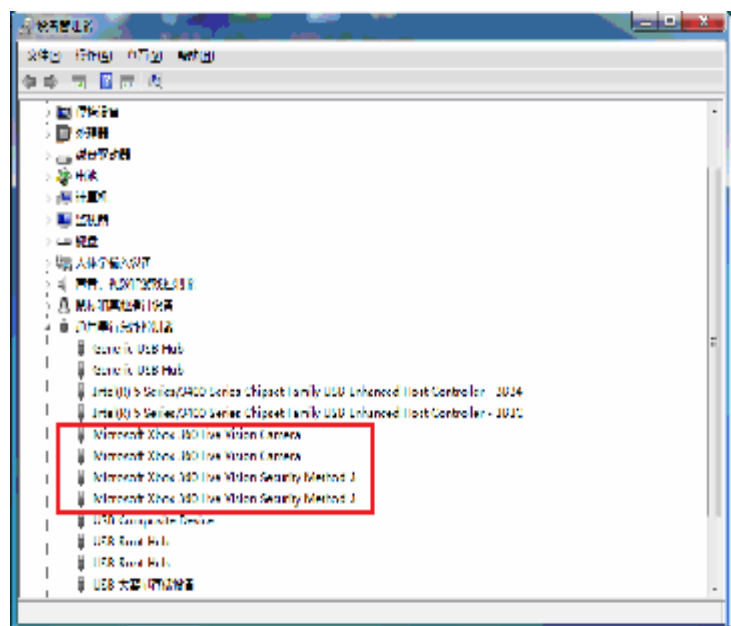
According to the 5.2 content, check the camera and the computer is connected properly, if the connection is normal, visual window as shown on the right, double-click visual window, switching the screen, the camera can not determine which two cameras are displayed or not displayed. Then change the corresponding camera sequence. (see 4.6 content, camera parameters section). If the window does not show cross on the visual screen, but it is black, represent the user's computer protection software is disabled, the user needs to re "Trust" operation.



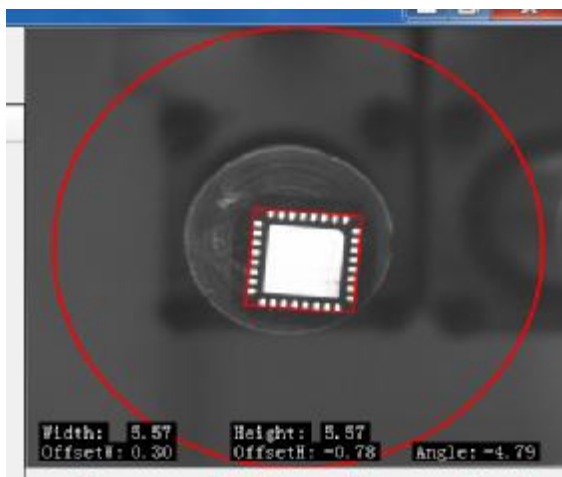
Based on 5.2 content, check that the camera and the computer is connected properly, if the connection is not normal, you need to repeatedly plug the USB port, plug in the process, observe the "Device Manager" window, is there have any response? if nothing happens, change USB port, change USB cable and the computer, then try again.

If the "Device Manager" window have respond, but still can not connect, install the contents of the box on the right, is there have XBOX360? if yes, there may be something wrong driver installed, download a drive of life, clicking peripheral drivers, to repair it.

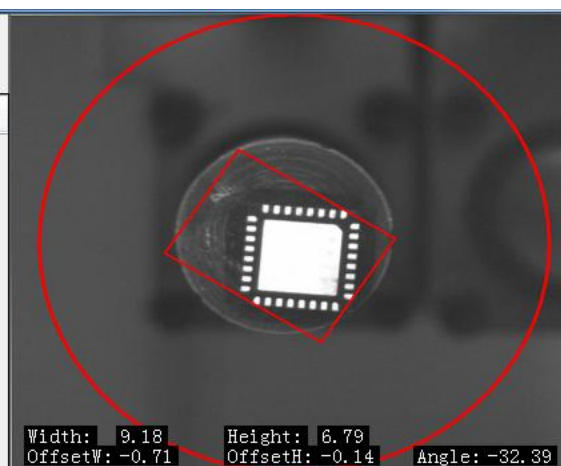
If still does not work, please contact us.



9.2 Chip Identification is incorrect



Picture 9.2.1



Picture 9.2.2

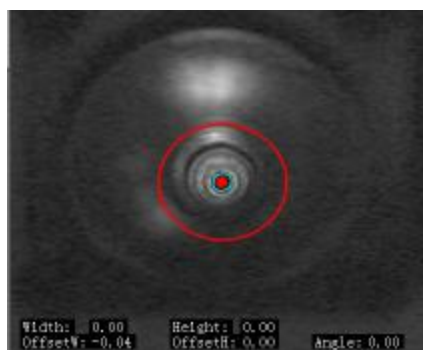
In the mounting process, sometimes we found through visual effects but even worse, the more crooked, which is due to recognition errors caused by the chip, as shown in Picture 9.2.1, it's correct recognition, Picture 9.2.2 is identification error.

We need to adjust the "System Settings", "camera parameters", "element value", this value maximum is 99.

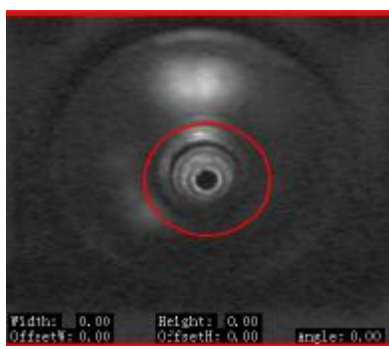
9.3 No Mark Point Mount

See 7.2 content.

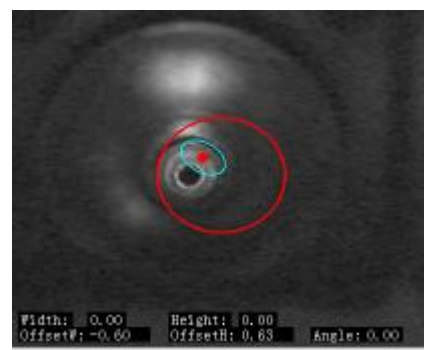
9.4 Nozzle Correction



Picture 9.4.1



Picture 9.4.2



Picture 9.4.3

Picture 9.4.1 is the only state to identify the correct nozzle. Other states have state nozzle recognition errors. As shown in Picture 9.4.2, Picture 9.4.3, if the recognition status between these three screens irregular transformation, you need to adjust the "System Settings", "camera parameters" "nozzle Threshold" parameter.

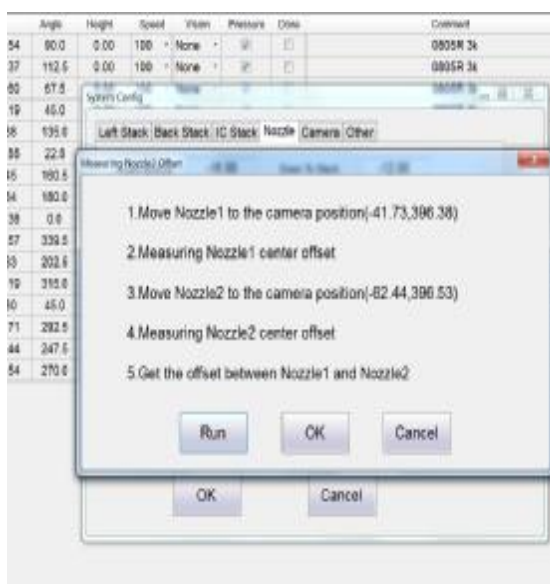
When suction or placed material, nozzle A is precise, but the nozzle B is crooked, this time need to correction of the nozzle.

Note: If the nozzle B placed is accurate, but nozzle A is not, according to the actual situation, to change other parameters, to ensure that nozzle A mount ready, and then modify the nozzle B.

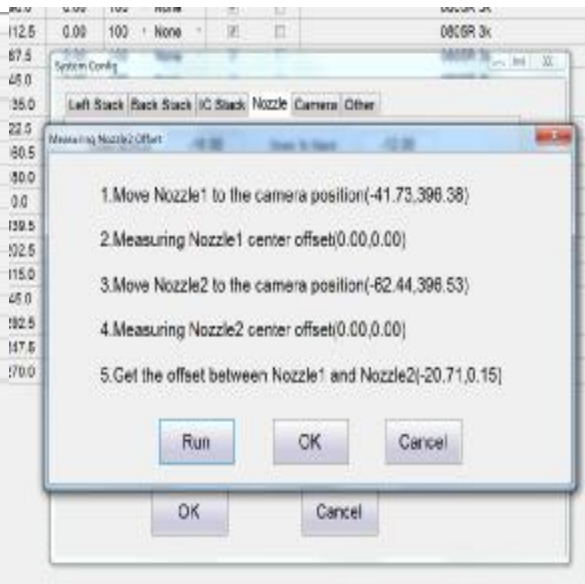
Automatic calibration: as shown in 4.6.4, click on the nozzle 2 offset behind the "automatic", the dialog box shown in Picture 9.4.4, click on "start", the nozzle will automatically go correction, the nozzle A will identify eight times, the nozzle B also recognizes eight times, in the process of identifying, you need to observe the nozzle identification is correct or not, if correct, as shown in Picture 9.4.5, click on the "OK" button. If not, click on

"start" to re-identify. After modifying, then click "OK" to close the "System Settings" button.

Manual calibration: as shown in 4.6.4 , to directly modify the value behind the "nozzle 2 Offset", in front of the box shows the X-direction, behind the box shows Y direction, after modifying, and then click "OK" to close the "System Settings" button.



Picture9.4.4



Picture 9.4.5

9.5 Manually Add Mark Point

See 7.22 content.

9.6 Stack Coordinate Correcting

Left Stack material correction:

If all the X-direction is not accuracy to feed stack, adjust the "System Settings", "Other parameters", "left setting Offset" in front of a box in the "X" value.

If the X-direction stack of individual materials are not accuracy, to adjust the "System Settings", "left Stack material", select the appropriate material stack number, "prick correction" in front of a box in the "X" value.

If the material is not accuracy to stack of the Y direction, adjusting the "System Settings", "left Stack material ", select the appropriate material stack number, modify the Y coordinate value.

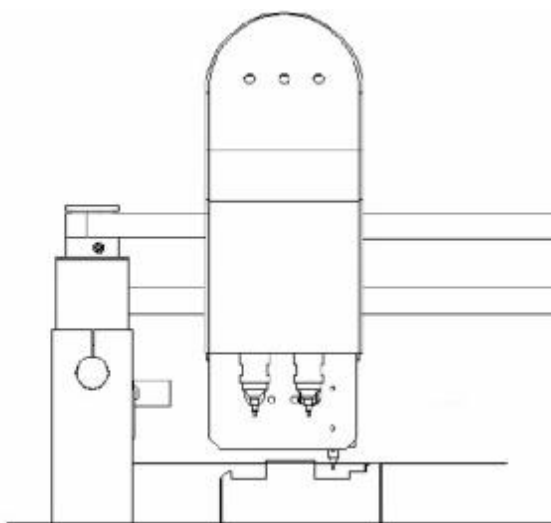
Back stack material correction:

If the X-direction is not accuracy to feed stack, adjust the "System Settings", "back feed Stack", select the appropriate material stack, modification X coordinate value.

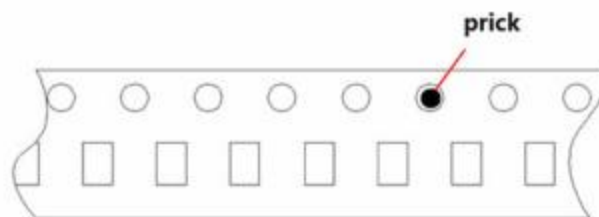
If all Y direction are not accuracy to stack feed , adjusting the "System Settings", "Other parameters", "back the prick offset ", followed by a block in the "Y" value

If an individual is not accuracy to feed stack in the Y direction, adjusting the "System Settings", "back feed Stack", select the appropriate material stack number, "prick correction" in front of a box in the "Y" value.

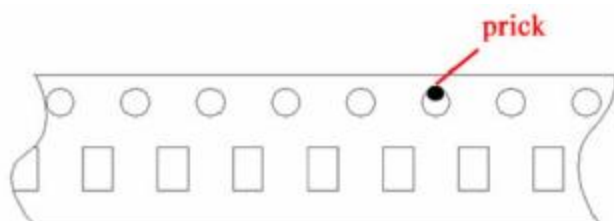
9.7 Prick Stuck



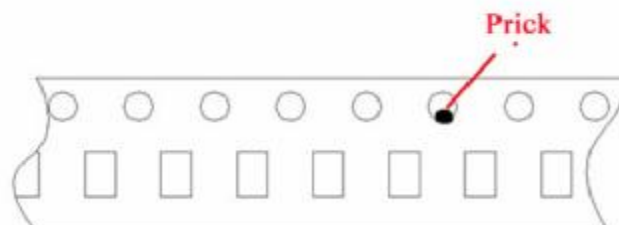
Picture 9.7.1



Picture 9.7.2



Picture 9.7.3



Picture 9.7.4

Left stack:

In the suction position correct premise, single-step, run to the position shown in Picture 9.7.1, observe the prick position,

As shown in Picture 9.7.2, prick inserted into a hole in the material is the correct position.

As shown in Picture 9.7.3, prick upper position by a perforated material, if all the material stack is the same position, "System Settings" "Other parameters", the left prick offset, behind the box "Y" value, this value should be reduced, the rate of decrease of 0.05 each time. If only individual material stack, "System Settings", "left stack materials," "prick correction" behind the box "Y" value, this value should be reduced, the rate of decrease of 0.05 each time.

As shown in Picture 9.7.4, the prick position below the perforated material, if all the material stack is the same position, "System Settings", "Other parameters", the left prick offset, behind the box "Y" value, this value should be increased, the amplitude is incremented by 0.05. If only individual material stack, "System Settings", "left stack materials," "prick correction" behind the box "Y" value, this value should increase, increasing the amplitude of 0.05 each.

Back stack:

In the suction position correct premise, single-stepping, run to the dial needle come down, observe prick position.

Prick position on the left side of the perforated material, if all the material stack is the same position, "System Settings", "Other parameters", behind the prick offset, in front of the box "X" value, this value should be increased, each increased amplitude of 0.05. If only individual material stack, "System Settings", "post-material stack", "prick correction", in front of the box "X" value, this value should be increased, each time increasing the

magnitude of 0.05.

Prick to the right position by a perforated material, if all the material stack is the same position, "System Settings", "Other parameters", behind the prick offset, in front of the box "X" value, this value should be reduced, each reduced amplitude of 0.05. If only individual material stack, "System Settings", "behind the material stack," "prick correction", in front of the box "X" value, this value should be reduced, reducing the amplitude of 0.05 each.

There is another situation, less material, the more obvious the stuck, or paper reel (eg M7 package), you need to look at the operation, as shown in Picture 9.7.5.



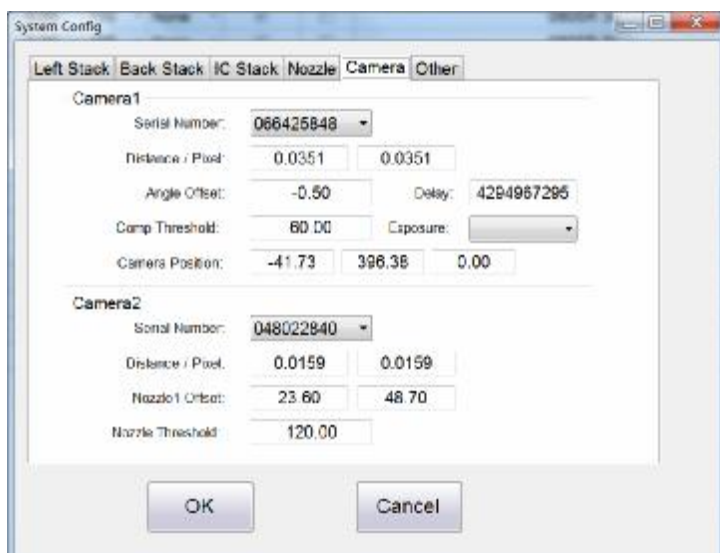
Picture 9.7.5

9.8 Chip Through Visual is Not Accurate

Chip through vision, but still not accuracy to placed.

Observed visual effect, if the identification is incorrect, see 9.2 content.

In identifying the correct premise, to observe, chip down to the PCB board height, is it appropriate? When drops to PCB height, PCB board has significant deformation, instructions down to the height of the PCB, too big, to see inside the program the height of the chip are set correctly or not; in other chip resistors and capacitors can be placed, you can also modify the "down to PCB" value.



In front of the premise is correct, user can fine-tune.

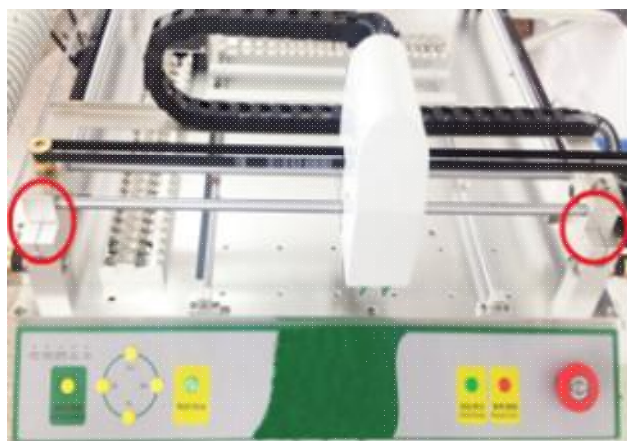
Open the "camera parameters" screen, as shown, when chip mounting, if the angle have deviation, to adjust the "angle offset" each adjustment is 0.05.

When chip mounting , X direction is misaligned, to adjust the "Offset nozzle 1", in front of the box, X the value of each adjustment is 0.05.

When chip mounting, Y direction is misaligned, to adjust the "Offset nozzle 1" in front of the box, Y value, each adjustment is 0.05.

Note: after the parameter modification, need to recalibrate the mark point.

9.9 Jumping Gear



The machine is placed in accordance with the position of the left, see the two circles, inside the gap, and see if the CD-ROM give to your image are the same. If not, it means that the occurrence of jump gear.

Jump gear, causing the gap is greater than the other half of the gap.

Put the smaller joint clearance, clamping, adjust the larger gap to keep the machine set right. User needs to do is take a screwdriver tool, put relatively small gap down this crack in the clamp, use the back side of the gap is pretty large breaking, you will hear a "click", indicating adjust the gap back, and then comparing to the pictures again.

9.10 Nylon Belt Can Not Be Separated



When the Nylon tape can not separated in time (see left-hand picture), it means the reels don't have enough friction, we need to increase friction.

Note: 1. This happens because there is a nylon strip without the correct volume on the reel, but caught between the reel and reel, this time, as long as the dial back to the nylon tape reels. Nylon belt need a smooth surface towards the rod, to reduce friction.

After prolonged use, the trays will cause tension pull pin card stock, need to hand loose trays.



Slightly thicker plastic parts require hand tabling slightly flattened.

As shown on the left, use the supplied 1.5mm hex screwdriver, in the material stack corresponding volume wheel clockwise to tighten the screw, when screwed, hand next to the rotary reel, feel the friction .Note: reels friction is not easy too big, too much will effect on the life of the reel or pull off the nylon belt.

10 Preventive Maintenance

10.1 Nozzle Maintenance

Please check the nozzle whether it is deformation or wear after impact, and make sure whether there are blockage inside the suction nozzles.

Press the suction nozzles to feel the tightness, if too tight, you should use the abluent to clean the inside of nozzle.

If nozzles are under severe wear, you should replace the nozzles.

10.2 Surface cleaning of machine

Look at the machine surface whether there are foreign matter, if so, using the air gun or brush to sweep away.

10.3 Check The Stack

Check the reels whether some reels and fix shaft is loose.

10.4 Cleaning The Camera

Using swab with alcohol to clean dust on the camera surface. If there are any components falling on camera surface, please clear in time.

10.5 Lubricate the XY-axis guide rail

First with a rag to remove the old grease, then add the new grease.

10.6 Computer Antivirus

The computer antivirus need on a regular basis so that the software can run steadily.