QL41 PICK AND PLACE MACHINE

/EASY /RELIABLE /SAFTY /PEACE OF MIND

Yueqing QiHe Electrical Technology Co.,Ltd

——— **www.qhsmt.com** ———

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1.Preface

Thank you for your purchase and use of a full-automatic vision chip mounter (hereinafter referred to as equipment) produced by Yueqing Qihe Electronics Technology Co., Ltd.. The operating principle of the equipment is acquired from a component supply device (for example material rack), and the equipment is mounted on a circuit board after the coordinate position is calibrated through a vision system.

1.1 Safe Use

The equipment includes a feeding zone, a working zone and a control zone. If related equipment operates incorrectly, personnel and equipment are possibly damaged. Basic skills of operators shall include editing of software and maintenance of basic system hardware and additional devices such as material racks.

Before use of equipment

·Before use of equipment, an user must read the manual and can operate it after fully understanding contents of the manual.

·After reading the manual, please properly keep it with you to see about doubtful points at any time.

·Irrelevant personnel are prohibited to operate the equipment.

·In order to ensure safe operation and maintenance of the equipment, the operators must understand potential risk occurrence zones of the equipment.

·If the operators reform the equipment without prior agreement of the company or repair it without following methods of the application manual, equipment safety is possible to be damaged seriously.

·The equipment can be absolutely not reformed and repaired by the methods without being admitted by the company.

1.2 Matters need attention

1、 In case of abnormality, failure or power failure, please cut off the power supply of the machine and unplug the power plug from the socket to prevent accidental start。

2、 When pulling out the power plug, please hold the plug and pull it out. Do not pull the wire out.

3、 Please take good care of the wooden cases and foam for loading。

4、 Please place the machine horizontally。

5、 To prevent electric shock and leakage, please keep the ground clean and dry。

6、 In order to prevent personal accident, please do not put your hand into the working area of the machine。

7、 In order to prevent accidents and electric shock accidents caused by unskilled operation, please entrust a person with professional knowledge of electricity or relevant technical personnel of the company to repair and repair the electric equipment。

8、 Do not use in the environment affected by high frequency welder and other noise sources (electromagnetic waves)。

9、 Do not use the power voltage above or below 10% of the rated power supply。

10、 Please stop using and unplug the power when it is thundering。

1.3 Relevant security

When the abnormal phenomenon occurs, the guarantee is as follows。

Security content Free repair service is provided in case of failure of component materials or manufacturing problems that constitute the equipment.

Guarantee period From the delivery date, the whole machine is guaranteed for one year, the nozzle is guaranteed for one month, and the belt is guaranteed for three months.

No security is provided for the following situations: When the storage device is damaged, it does not guarantee the loss of data stored in it, so it should be prepared for backup at ordinary times. When data is damaged due to the wrong action of the system caused by running a program unrelated to the application of the device or due to virus infection, etc. Aging over time, or the abnormal phenomenon caused by natural wear and tear of equipment (e.g. paint, electroplating, depreciation of consumables, etc.). Slight sensory changes that do not affect the quality and

performance of the equipment (e.g. controller action sound, motor rotation sound, air pump sound, etc.). Abnormal phenomena (e.g. water, powder and impure substances, dust on machine equipment, oil stains, etc.) are caused by the use of environmental conditions. Earthquake, typhoon, flood, fire, lightning and other natural disasters or accidents. Defective or faulty equipment maintenance.

2 Understand the equipment

2.1 Equipment introduction

While TVM925 and QM41 have achieved significant results, the research team of the company is determined to launch this model QL41 in the LED patch. The design highlights of this model are:

1: four-headed and five-headed visual design. Four upper vision with each suction nozzle, one lower vision detection circuit board position.

2. The structure of guide rail slide and belt is adopted to make the performance more stable and the operation more smooth.

3. The closed loop motor is used, and the machine never loses step.

4: the four heads are absorbed together, and the vision is passed simultaneously, the speed is faster.

5. The area range of adaptive circuit board is wider.

2.2 Hardware features

The external dimension of QL41 is L2060mm*W660mm*H640mm, mainly composed of working head, upper and lower vision system, workbench, flying frame and industrial control computer. Voltage AC220V or AC110V, power 300W.

2.3 The software features

The software is independently developed by the company, with independent intellectual property rights, Chinese/English interface, easy to operate.

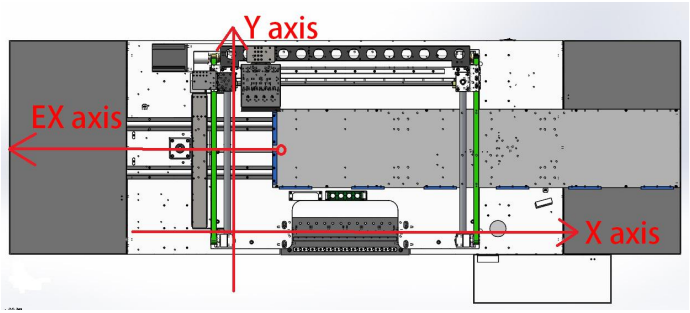
2.4 Nozzle size

This equipment adopts the four-head design, each suction head is equipped with different types of suction nozzle, so the suction nozzle is universal JUKI suction nozzle. Can be divided into 1, 2, 3, 4. The default no. 1 nozzle is the smallest, and no. 4 nozzle is the largest.

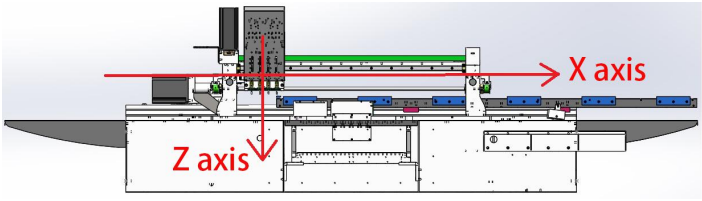
The corresponding device of each suction nozzle is as follows:

Suction nozzle type	legend	Apply to encapsulate
Nozzle No. 1		Recommend to encapsulate： 0603、0805
Nozzle No. 2		Recommend to encapsulate： 0805,1206，1210，2512
Nozzle No. 3		Recommend to encapsulate： 3528，5050，SOP-8

2.5 Coordinate system regulations



Picture 2.5.1



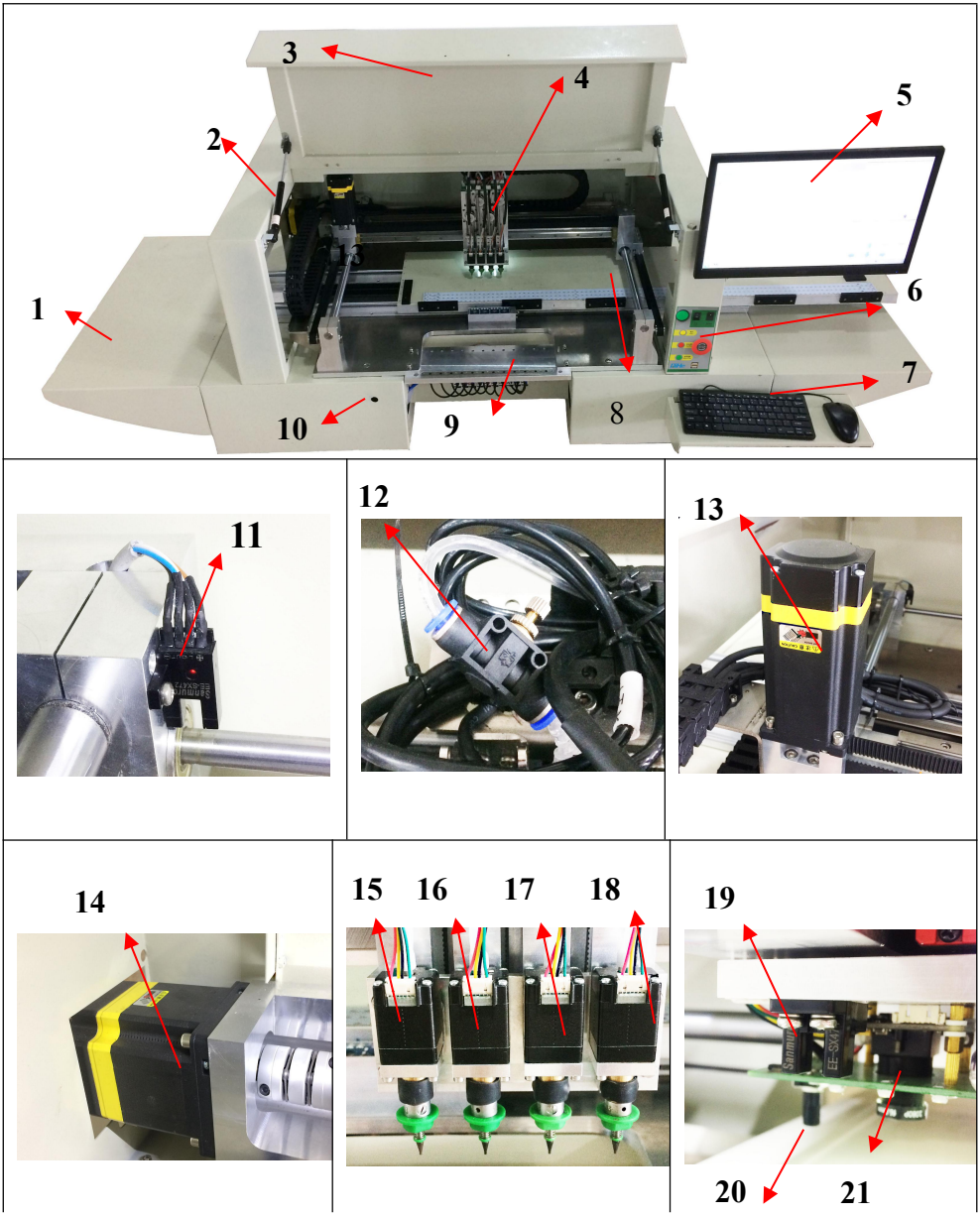
Picture2.5.2

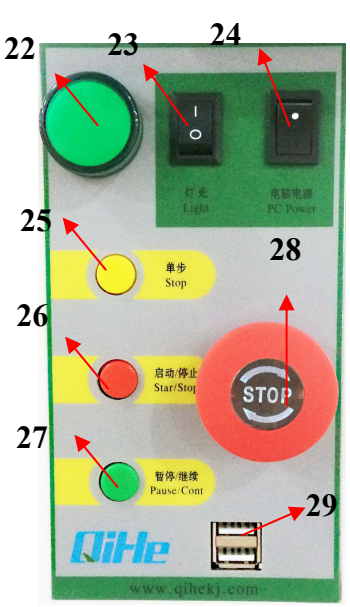
FIG. 2.5.1, FIG. 2.5.2, is the coordinate system of the device.Where, XY axis movement range: 530*430mm (this data is not absolute),The movement range of EX axis is 800mm and Z axis is 15mm.The coordinate position in this device refers to the position corresponding to the lower visual center, and other coordinates are all offset from the lower visual center.

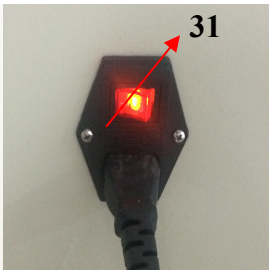
2.6 PCB specifications

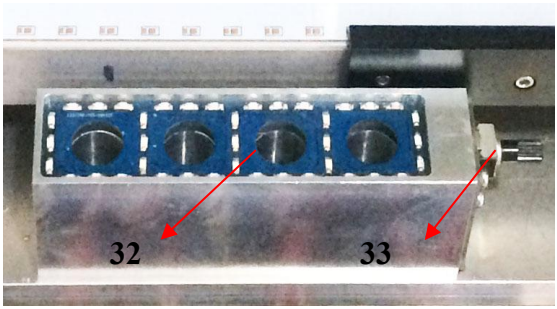
The mounting range is 20mm*20mm--240mm*1200mm

3 Introduction to mechanical structure







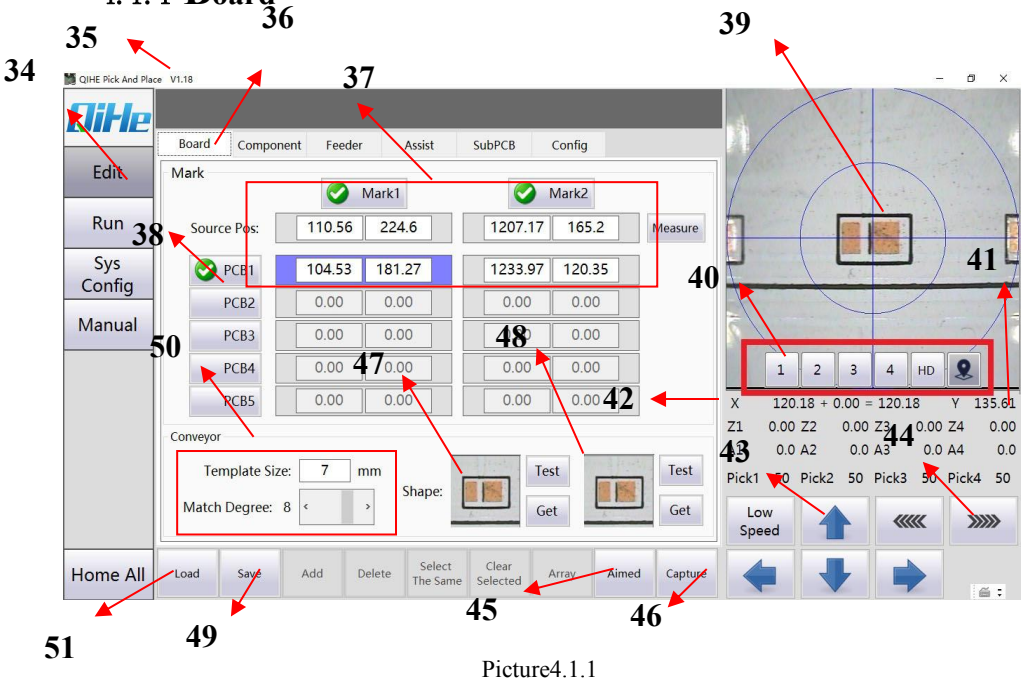


1、Protect the side panel，2、Hydraulic support rod，3、Machine cover，4、Pasted head，5、display， 6、Control panel，7、Mouse and keyboard， 8、EX axis PCB placement area，9、Flying pad，10、Vibrating flight-up interface，11、Y positive limit sensor，12、Blow valve，13、X motor，14、Y motor，15、Suction nozzle A1 motor，16、Suction nozzle A2 motor，17、Suction nozzle A3 motor，18、Suction nozzle A4 motor，19、X negative limit sensor，20、下 Light source brightness control knob，21、Under the view camera，22、On line indicator light，The flicker indicates that there is no or is online，The constant light indicates the success of online operation。23、Internal lighting button，24、Industrial control motor start/stop button，25、step button，See 4.2 for specific usage。26start/stop button，See 4.2 for specific usage。27、Pause/continue button，See 4.2 for specific usage。28、Scram button，If something unexpected happens during operation, press the button， You can turn off the power。 When running the device, the button needs to be opened。29、The USB interface，30、Voltage regulator valve，31、Equipment power switch，32Depending on the camera，33Upper light source control knob。

4 Software description of upper computer

4.1 Edit

4. 1. 1 Board



Picture4.1.1

34、Edit the file button and go to the edit file page。 35、The SN number of the device and the version number of the host software。

36、Go to the edit page of the board and set the mark point。

37、mark1, mark2 corresponds to two mark points on a circuit board，Enter the coordinates of the mark point on the drawing.

38、Only circuit board 1 is selected, indicating that only one circuit board is attached，Enter the actual coordinate position of the circuit board in the back box， The input of the actual coordinate can click "grab the coordinate"，In fact, there are a few pieces of jigsaw puzzle on a few

pieces, up to five。

39、The visual window, the image seen by the camera, is displayed in that window。

40、 The serial number 1-2-3-4 corresponds to the picture shown by the four upper vision cameras, and the hd corresponds to the hd camera, which does not include the hd camera， The last graphic symbol represents the picture shown by the camera, and the camera switching aspect is to click these buttons.

41、Represents the coordinate data of the Y-axis。

42、 X axis coordinate data， the X-axis coordinates contain two parts， the plus sign is preceded by the usual X coordinate,the mechanical coordinates of the equipment shall be subject to this，after the plus sign is the coordinate of the EX axis，the combination of two values indicates the actual coordinates of the circuit board in the equipment coordinate system。

43、X axis and Y axis direction button。 44、EX axis direction button。

45、Aimed，represents the use of a downview camera to specify coordinates in a coordinate system。

46、Capture，use the camera to take any coordinate in the coordinate system and grab it.

47、 The center of the lower vision camera is aligned with reference point 1. Press the grab button, and the image seen by the camera is copied to match the mark point of the next board. The test button can detect whether the captured image can be recognized by the camera.

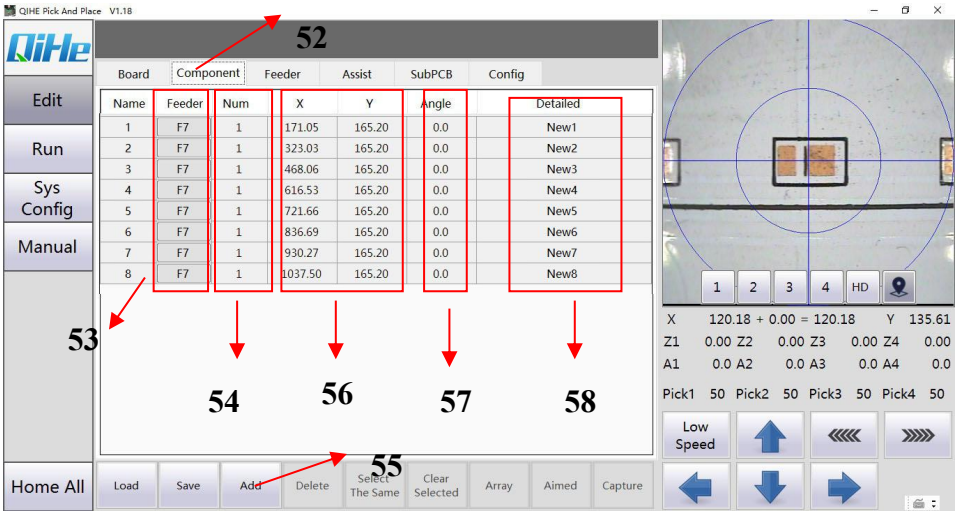
48、The center of the lower camera is aligned with reference point 2, the same method as 47.

49、After editing the file, you need to save it, otherwise the editing is invalid.

50、The smaller the size of the template and the smaller the number, the smaller the image is when 47 is captured. The larger the number, the opposite is true. The matching degree represents the image captured by this board. Compared with the image captured by the board below, the higher the matching degree is, the higher the similarity degree is, and the more strict the consistency requirement of the circuit board is.

51、Load the file, load the exported coordinate file from the PCB file.

4. 1. 2 Component



Picture4.1.2

52、Go to the component page.

53、Select stack position.

54、Because of the high repeatability of LED lamination, the same kind of materials are usually placed in several stacks. The number of materials in the stack is several identical, for example, "top 7" is selected for the stack, and "number of stacks" is written as 4.

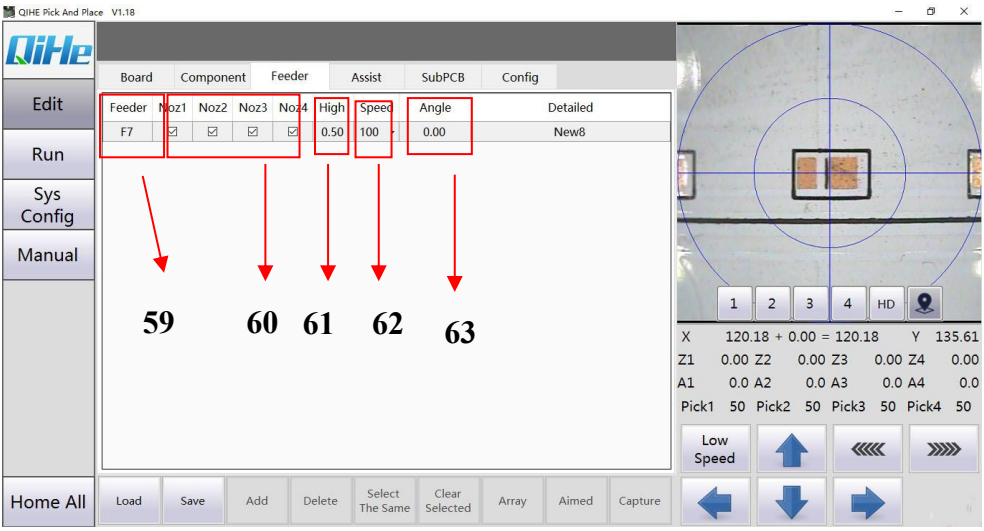
55、Add，click the add button and then click to grab the coordinate. At the same time, modify the Angle and height of the coordinate information.

56、Represents the X and Y coordinates of the device, which can be modified if only individual devices are not correct.

57、Represents the Angle of the device. Due to the different encapsulation, the posted result is different from a certain Angle. Therefore, the Angle should be modified here.

58、Detailed：Said the explanation of the device, compare the size, type, etc.

4. 1. 3 Feeder



Picture4.1.3

59、Represents the stack you previously selected，As shown in figure 4.1.3, it indicates that you have chosen the top 7 stack.

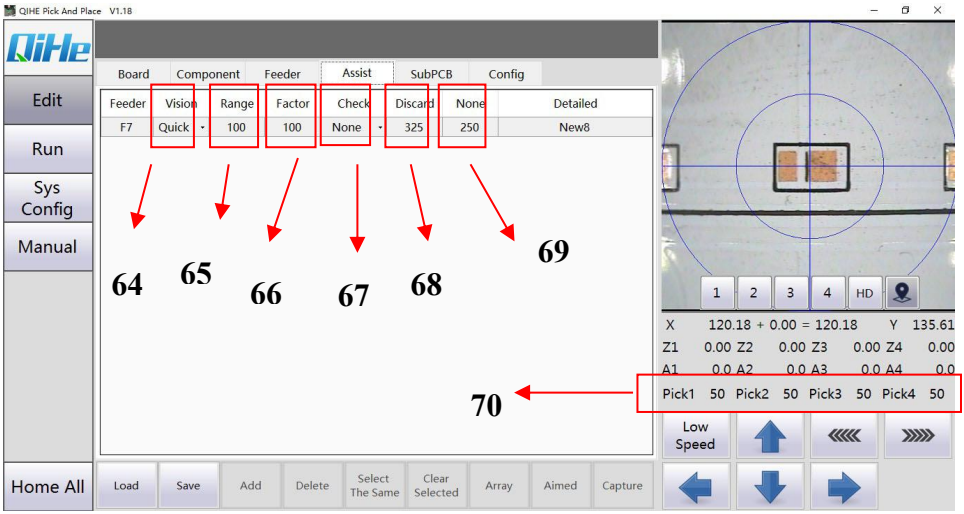
60、Select the corresponding suction nozzle and tick more than one hook, indicating that multiple suction nozzle can be in this stack to absorb the material.

61、Fill in the height of the attached device according to the actual situation.

62、Change the component speed of the device if the total speed is the same.

63、Due to the different packaging, the posted results are different from a certain Angle.So you can fix the Angle here, or you can change the Angle here.

4. 1. 4 Assist



Picture4.1.4

64：Represents the time of patch, whether the vision, you can choose but no vision, improve the speed of paste.However, because the device is four heads simultaneously to absorb material, so, the selection of visual, will improve the accuracy.

65：Represents the recognition range of vision. In the window shown by the upper vision camera, a range suitable for the size of devices can be selected to eliminate external interference as much as possible.

66：The visual threshold value, different devices, reflect light with different brightness and darkness, causing the range of visual recognition problems, the data can be changed, in this case, only on the corresponding stack of materials. Changing the overall visual threshold is discussed below.

67：Represents the detection mode of the material suction. It can choose not to detect, and it can choose the pressure sensor detection.

68：Discard threshold: indicates that after a material is absorbed by the suction nozzle, the pressure number "70" required by the pressure sensor detection is less than the value set, and greater than the value set by the "no feed threshold", indicating that there is a suction material. However, due to various reasons, the material is not absorbed properly. The pressure number "70" detected by the pressure sensor is greater than the value set, indicating that the suction is normal

and the lamination is carried out.

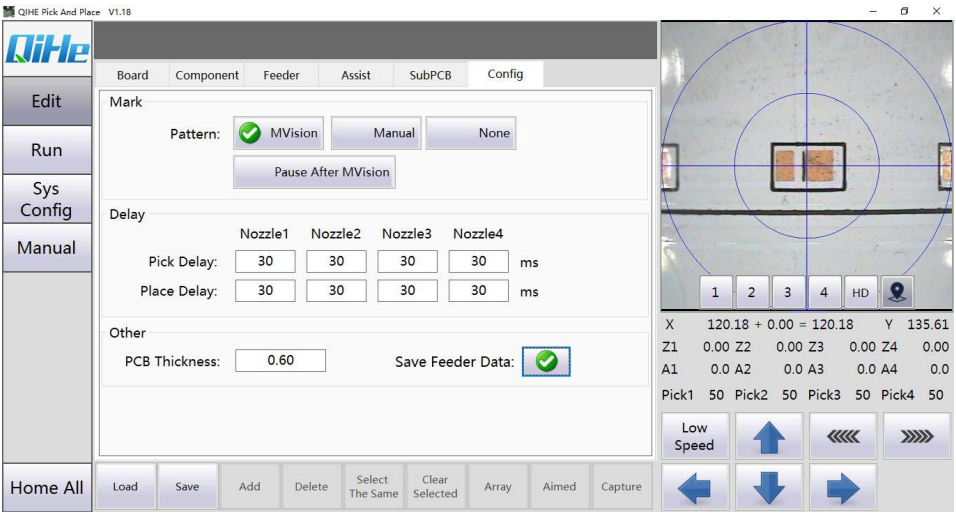
69：No-charge threshold: indicates that after the suction nozzle has absorbed a material, the pressure number "70" required by the pressure sensor detection is less than the value set, indicating that the material has not been absorbed, and it is directly re-absorbed again.

70：Represents the current pressure value of each suction nozzle.

4. 1. 5 Subpcb

See 5.5.3 for details

4. 1. 6 Config



Picture4.1.5

Mark：

Pattern：【MVision】The lower camera will automatically run above the mark point and automatically correct the error so that the center of the camera is aligned with the center of the mark point.【Manual】：In manual operation, the camera runs above the mark point, and manually corrects the error, so that the center of the camera is aligned with the center of the mark point, which will be used in case of automatic recognition failure.If there is no requirement for precision, you can choose 【None】. Note: for the accuracy of the patch, it is recommended to identify mark

points.

【Pause after MVision】：If the hook is made, after the recognition of a mark point is completed in automatic recognition mode, it will be suspended, waiting for the manual to confirm whether the mark point is recognized correctly, and then manually identifying the next step.If you don't check, in automatic recognition mode, after you have identified a mark point, whether this mark point is correct or not, the next mark point will be identified.It is recommended to use this feature if there is interference from other devices in the lower visual field to ensure correct mark spot identification.

Delay:

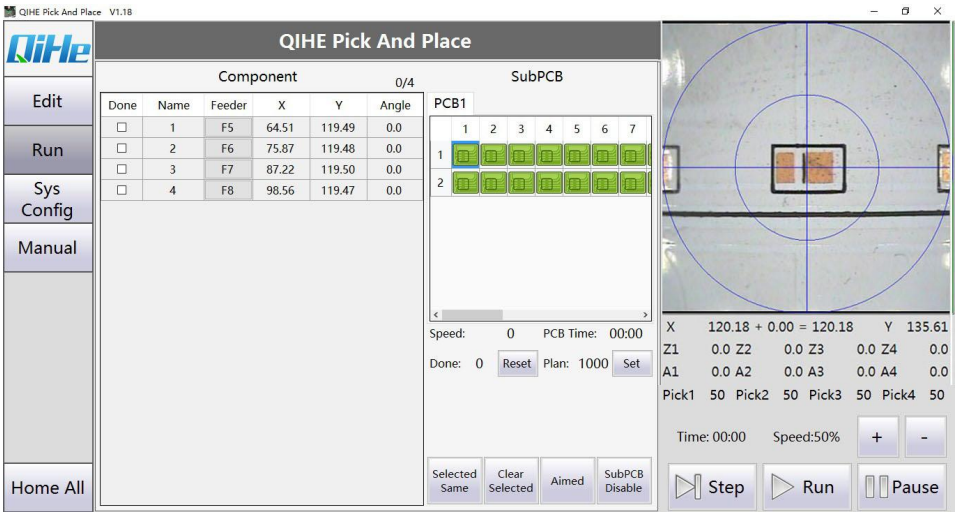
If the device has leakage or weak suction, we need to increase the suction delay of the corresponding nozzle.

If the device is missing or the device is brought in, we need to increase the adhesive delay corresponding to the nozzle

Other：PCB Thickness,Fill in according to the thickness of PCB board

Store stack location data, recommended with the file。

4.2 Run



Picture4.2

Run：

Aimed： Select any device, hold and hold this button, do not loosen it, and move the downward vision to the top of the corresponding device. Observe whether the device is in the center of the camera. Select several more devices to observe.

SubPcb Disable：If the board is not attached, you can choose the gangway.

Step： Single step operation, subdivision of each pasting action, click, a section of the program to facilitate user debugging. Corresponding to the "25" button in the panel.

Run：It's about starting or stopping. New load for a period of SMT program, press the key once, will automatically start to run the program, in the process of running, press the key again, there will be a dialog box (whether determine stop y/n), choose according to actual situation, if the stop is determined, and then click the button, if you choose "no", you will need to press down the "pause/continue button", also can choose by computer operation, of course.（To stop the program, press twice in a row）。

When you restart a mount application,Press the button once and the dialog box will pop up. Last time or all reposted? Continue last time/all repost), according to the actual situation, if you want to continue the last action, press this button again. If you want to repost all the repost, you need to press the "pause/continue button" below, or you can choose to operate on the computer.orresponding to the "26" button in the panel.

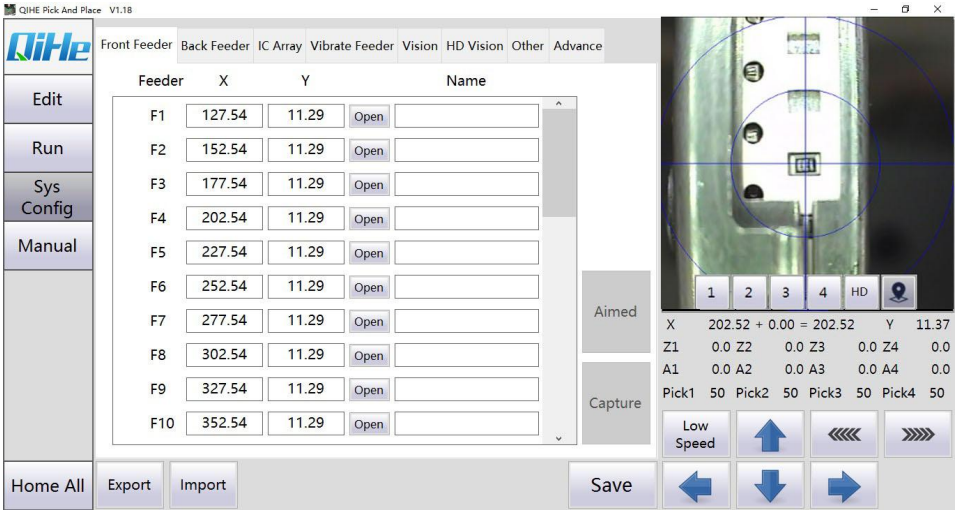
Pause：The button is used during the process of mounting, and the procedure is suspended or continued. Press this button in a one-step state to remove the one-step state and run continuously. Corresponding to the "27" button in the panel.

Time：Display the time of Posting.

Speed：Adjust the running speed of the machine from 0% to 120%.

4.3 Sysconfig

4. 3. 1 Front Feeder



Picture4.3.1

Front feeder：

Feeder：Corresponding feds.

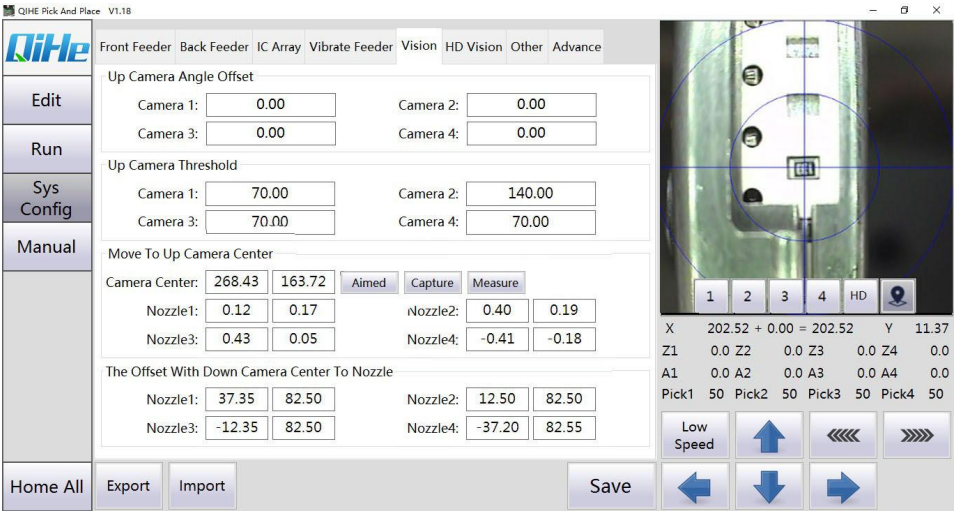
X，Y：The corresponding X and Y coordinates are captured by the lower vision camera.

Open：Open the corresponding solenoid valve.

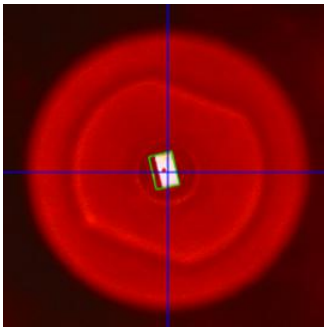
Aimed：Locate the selected coordinates.

Capture：Set current coordinates.

4. 3. 2 Vision



Picture4.3.2



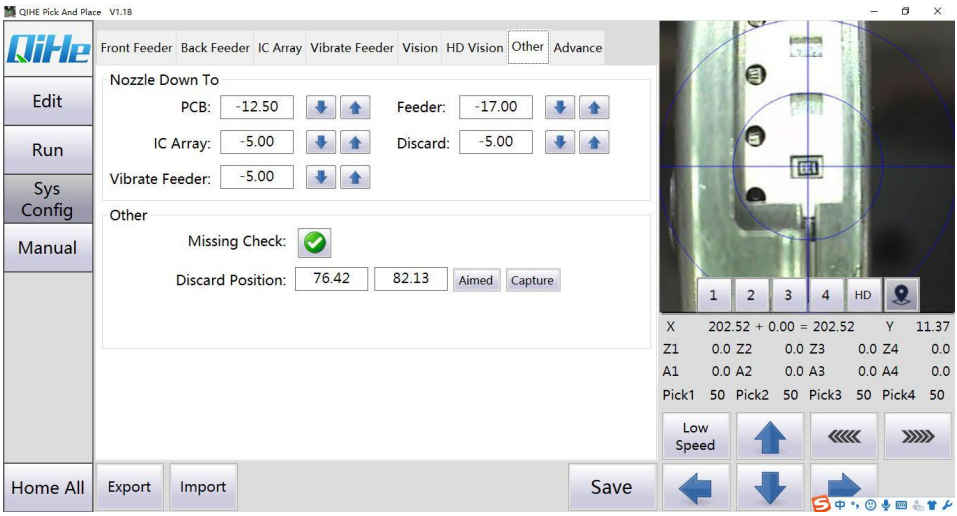
Up Camera Angle Offset：When the component mounting Angle has deviation, need to adjust.

Up Camera Threshold：As shown in the figure on the right, when the component is over vision, the recognition is not good, and when the green box is larger than the device,This parameter needs to be adjusted so that the green box is just outside the component.And the parameters here, the parameters here, represent the amount of material that this suction nozzle is taking, are all this threshold,For example, no. 1 suction nozzle can absorb material stack 1, material stack 2, material stack 3 . The visual threshold shown in "66" represents the threshold of this stack.

Camera Center：The theoretical distance between the mouthpiece is 25mm, and the theoretical distance between the camera is 25mm. However, the actual distance between the mouthpiece fluctuates up and down around 25mm, and the actual distance between the camera also fluctuates up and down around 25mm. The user simply moves the suction nozzle to the middle of the corresponding camera, grabs the coordinates, then clicks on the measurement, and then completes the calibration automatically according to the prompt step by step.

The Offset With Down Camera Center To Nozzle：Under normal circumstances, aim the camera at the center of a device's coordinates, and then switch to the nozzle. The nozzle must also be the most accurate center of the device's coordinates. If the nozzle is not allowed to change the center of the device coordinate, the corresponding parameters of the nozzle need to be adjusted.

4.3.3 Other



Picture4.3.3

PCB :Drop to PCB height.

IC Array：Drop to tray height.(This model is out of use)

Vibrate Feeder：Descend to the height of the vibrating tray.(This model is out of use)

Feeder：Drop to Feeder height.

Discard：Drop to the discard position.

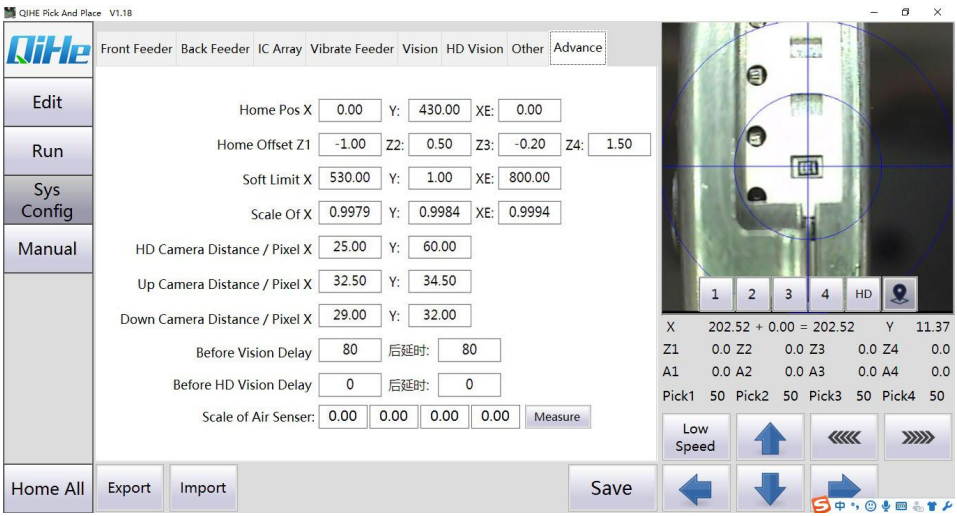
Press the back up and down arrow and the distance between the suction nozzle and the suction nozzle.

other：

Missing Check：When the tick is made, it indicates the detection function of open air and lack of material, and then it is used together with "68" and "69". If there is no tick, it means to turn off the missing material detection function. The value set in "68" and "69" will not work.

Discard position：This coordinate is set by the customer himself, indicating the location of the scrap.

4.3.4 Advance



Picture4.3.4

Home Pos：Represents the coordinates shown by each axis when returning to the origin. Generally, no modification is required.

Home offset：When returning to the origin, if Z1, Z2, Z3 and Z4 are not at the same level, this parameter needs to be modified.

Soft Limit：Represents the axis coordinate stroke, generally does not need to be modified.

Scale of：Indicates that there is a deviation between the distance that the machine shows moving and the actual moving distance, and generally no modification is required.

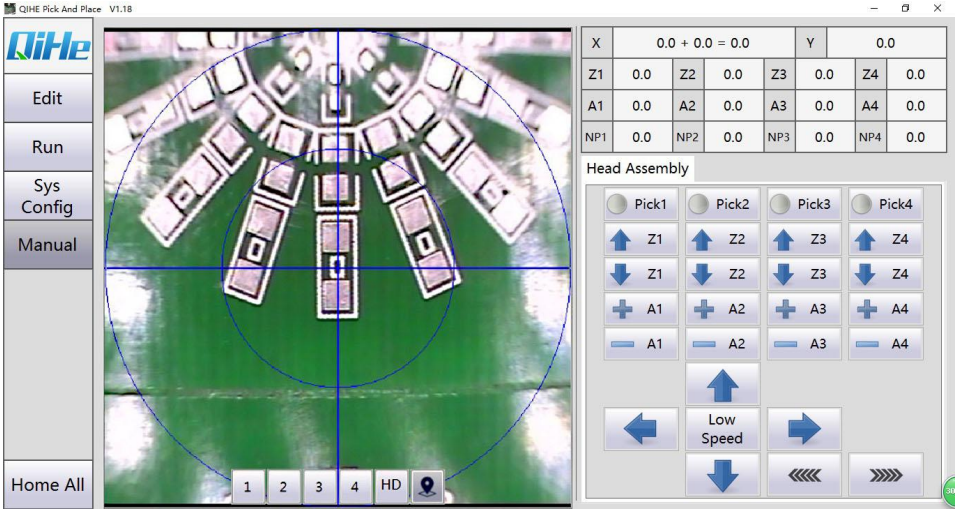
Up Camera Distance/Pixel：Generally, no modification is required.

Down Camera Distance/Pixel：Generally, no modification is required.

Before Vision Delay：Over visual wait time and over visual wait time.

Note: for all parameters not mentioned, QL41 is not available and users need not pay attention.

4.4 Manual



Picture4.4

Manual：It mainly tests whether the shafts are working normally and whether the valve module is working normally.

Open Pick1，The light in front of Pick 1 turns green，Put your hand in the Nozzle 1, and the NP 1 will change，As shown in figure 4.4, it indicates that the gas path works normally.NP 2, NP3, NP4 are the same.

【↑Z1】：Nozzle A moves up. When suction nozzle A is at the origin, this function key is invalid.

【↓Z1】：Nozzle A moves downward with A maximum stroke of 15mm.

【↑Z2】、【↓Z2】、【↑Z3】、【↓Z3】、【↑Z4】、【↓Z4】are the same.

【+A1】： nozzle A rotates in the positive direction.（The positive and negative judgment is consistent with the direction of the coordinate system Angle）

【-A1】： nozzle A rotates in the negative direction.

【+A2】、【-A2】、【+A3】、【-A3】、【+A4】、【-A4】are the same.

【←】： 4（Pasted head）It goes in the negative X direction.

【→】： 4（Pasted head）It's going in the positive X direction.

【↑】: 4（Pasted head）It's going in the positive Y direction.

【↓】: 4（Pasted head）It goes in the negative Y direction.

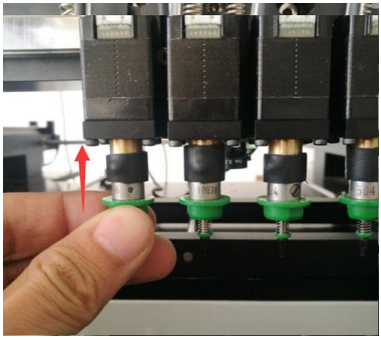
【Low Speed】Click to switch between Low Speed and High Speed to control the running speed of the mounting head in manual mode.

【««】：It's going in the positive EX direction.

【»»】：It goes in the negative EX direction.

5 Skills required before pasting

5.1 Change the nozzle



Prepare a suction nozzle and then push it up to complete the installation.When the suction nozzle needs to be replaced, hold the motor by hand and pull it down to complete the disassembly.

5.2 Air volume adjustment

As shown in the left picture, the blow control valve is located behind the mounting head.The valve consists of three parts: adjusting knob, locking cap and cavity.When adjusting, first loosen the lock cap, then twist the adjusting knob.Clockwise rotation is to reduce the amount of air blowing, counterclockwise rotation is to increase the amount of air blowing, the user adjusts the

amount of air blowing according to the actual situation.

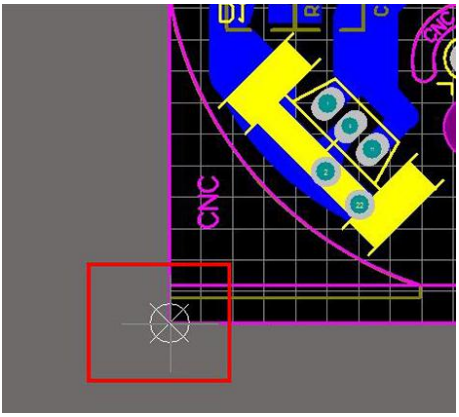
5.3 Coordinate export

At present, we only support the coordinate files exported by protel, Altium Designer (DXP), Pands, Candes and proteus in the format of ".csv ", since protel and Altium Designer (DXP) are commonly used, these two software export methods are only explained here.

5. 3. 1 Origin positioning

The coordinates of the circuit board should be consistent with those of the equipment, so the origin positioning of the circuit board should be carried out. Protel 99 SE and Altium Designer (DXP) are positioned in the same way, so when we talk about the origin positioning of DXP this time, Protel 99 SE can be referred to this method. As shown in figure 5.3.1, "Edit" selects "Origin (Origin)" in the following menu and then clicks "set". Then select the lower left corner of the circuit board as the origin (as shown in figure 5.3.2), and you can export the coordinate step.

Picture5.3.1

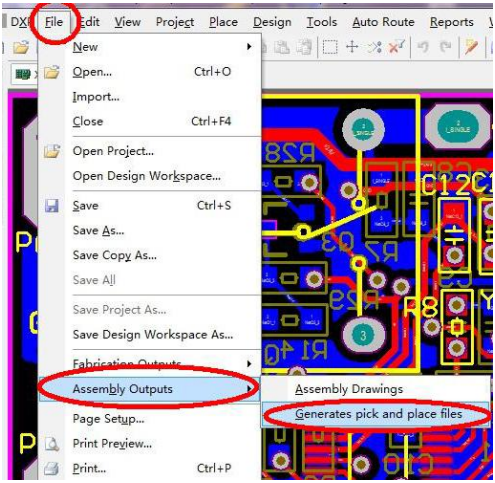


Picture5.3.2

5. 3. 2 Altium Designer（DXP）Coordinate the export

The first step：Origin location.

The second step： As shown in figure 5.3.3, first left-click "file", select "assembly output", then select "BPR pick and place files", and then step out of the screen figure 5.3.4. The format is ".csv ". The file is suffixed with the suffix ".csv "in the same directory as the PCB file.



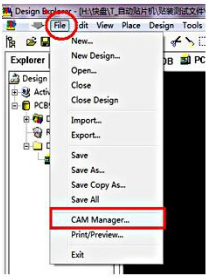
Picture5.3.3

Picture5.3.4

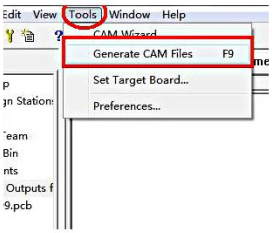
5. 3. 3 Protel99Coordinate the export

The first step：Double-click to open the Protel99 software, load the PCB file that requires the patch, and position the origin.

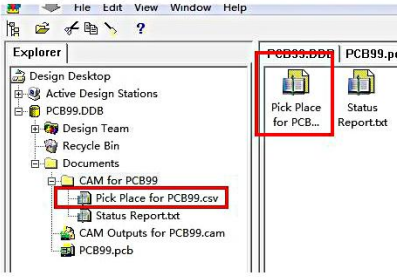
The second step：As shown in figure 5.3.5, first left-click "File", select "CAM Manager", then follow the steps of figure 5.3.8 to complete the coordinate export, then follow figure 5.3.6 and figure 5.3.7 to find the File, which is a suffix named ".csv ".



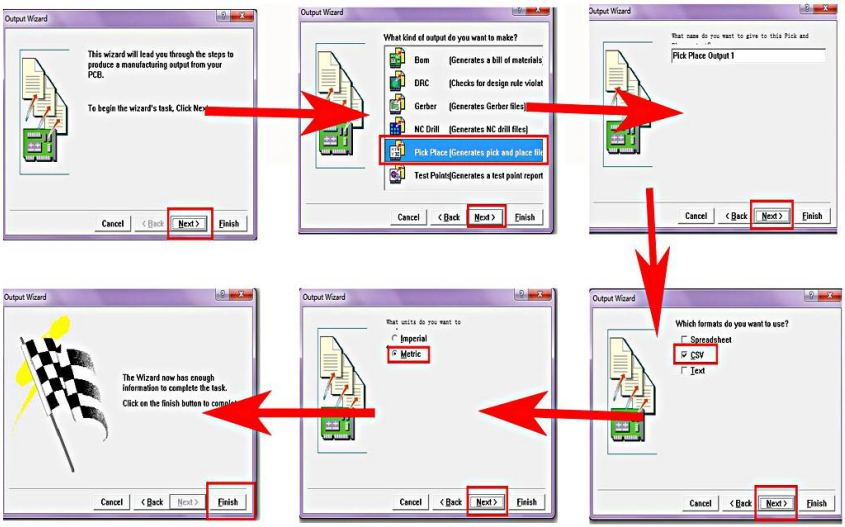
Picture5.3.5



Picture5.3.6

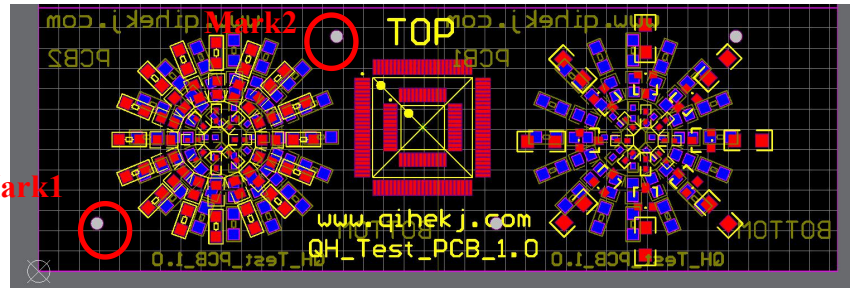


Picture5.3.7



Picture5.3.8

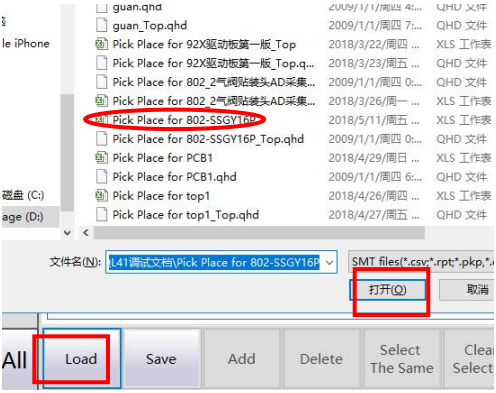
5.4 Back coordinate derivation



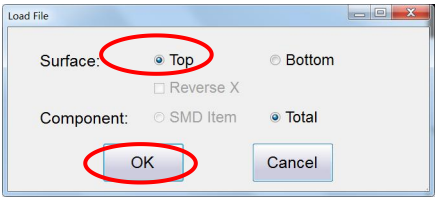
Picture5.4.1

As shown above, the PCB file contains the top layer coordinates and the bottom layer coordinates.The origin is set at the bottom left. Mark1（7.3，6），Mark2（37.3，29.4）。

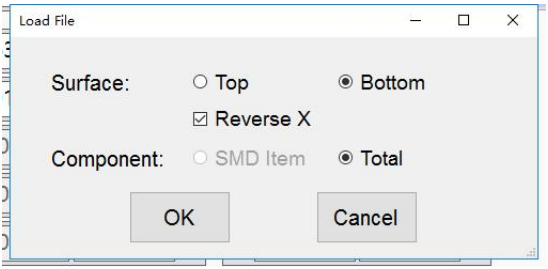
The first step is to export the coordinates. See 5.3 for details



Picture5.4.2



Picture5.4.3



Picture5.4.4

The second step：Load the file, as shown in figure 5.4.2, click load file, select the exported coordinate file, and click open. If posted on the front, select and click ok as shown in figure 5.4.3. If posted on the reverse side, select and click ok as shown in figure 5.4.4. Note: the X-axis direction is reversed, must choose.

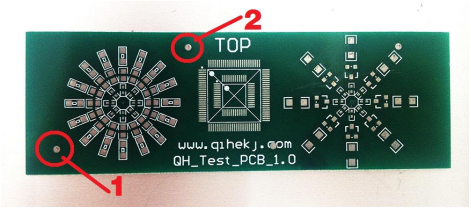
The third step，Set mark point, as shown in 6.8.

Note: the X-axis coordinate of mark point should be reversed when putting it on the back. As shown in figure 5.4.1, Mark1 (7.3, 6), Mark2 (37.3, 29.4), but when posted on the back, Mark1 (-7.3, 6), Mark2 (-37.3, 29.4).

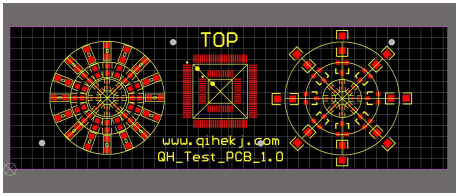
The above method of generating coordinate on the back of the post has a strong understanding of the operator and mainly applies the knowledge of coordinate system, relative coordinate system and absolute coordinate system.

5.5 Mark point set

5. 5. 1 No imposition



Picture5.5.1

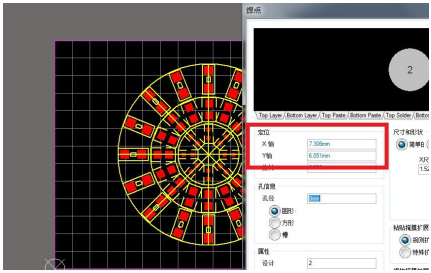


Picture5.5.2

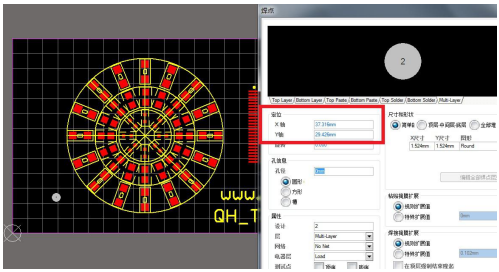
Figure 5.5.1 is the test PCB board provided by the company. Figure 5.5.2 is the PCB file of this board

Figure 5.5.1 the origin of the two circles is the reference point 1 and reference point 2 of this circuit board.

The first step，Find and record the corresponding coordinates of the two mark points in the PCB file, as shown in the box of figure 5.5.3 (7.306, 6.051). FIG. 5.5.4 coordinate of reference point 2 shown in the box (37.316, 29.426).

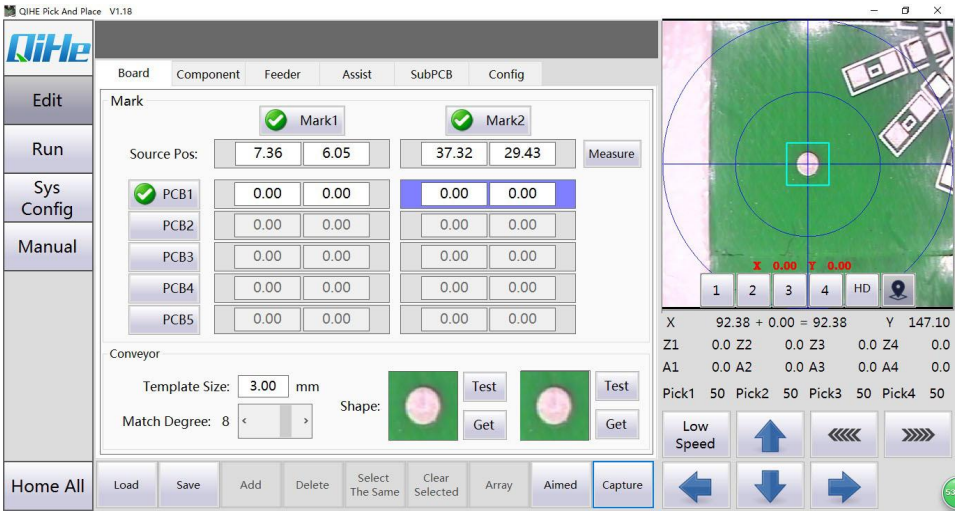


Picture5.5.3



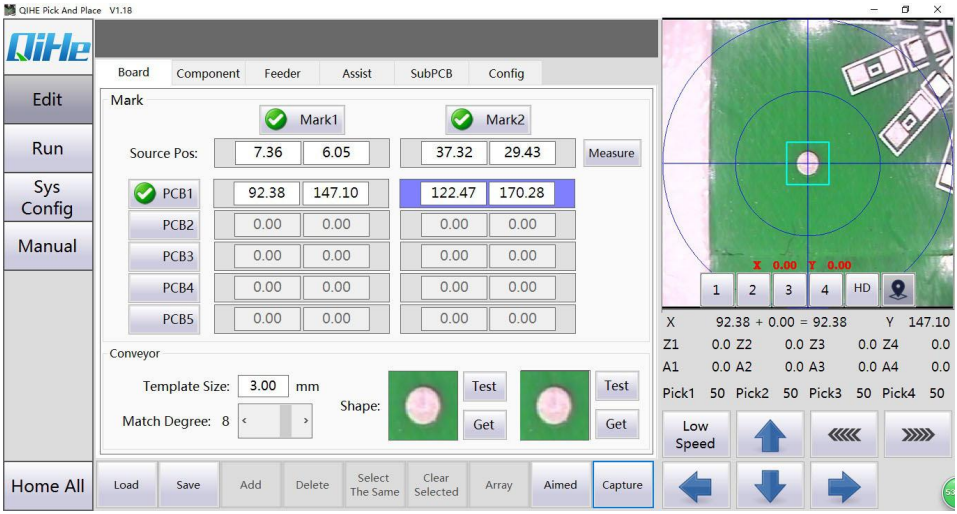
Picture5.5.4

Step 2: open the software provided by our company and load the coordinate information of this PCB board (that is, the exported CSV format file), and enter the edit page of the baseboard. As shown in figure 5.5.5, enter the drawing coordinates of reference point 1 and reference point 2.



Picture 5.5.5

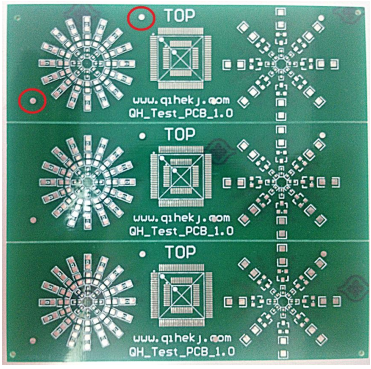
Step 3、Manually move the mounting head so that the lower visual camera is aligned with reference point 1, as shown in figure 5.5.5, and the cross is aligned with the midpoint of the reference point. Then click "grab", and the image information of reference point 1 will be displayed in the first box of the template image, which will be used to compare the image information of reference point 1 next time. Adjust the "template size" depending on the size of the reference point. Click the cursor on the box in front of circuit board 1 and click "grab coordinates" to produce the actual coordinates of reference point 1. See figure 5.5.6. Likewise complete the setting of reference point 2, as shown in figure 5.5.6.



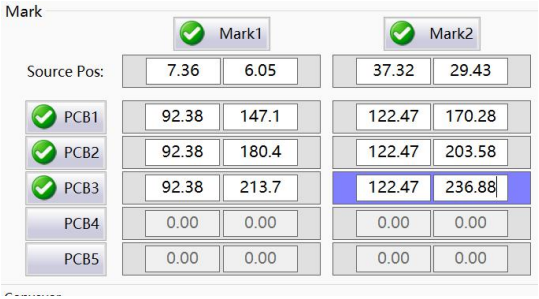
Picture5.5.6

Determine whether mark dot input is correct:The X - coordinates of the two mark point drawings are reduced by approximately the X - coordinates of the actual coordinates. The Y coordinates of the two mark point drawings are reduced by Y equals to the Y of the actual coordinates.

5. 5. 2 General imposition



Picture5.5.7



Picture5.5.8

Taking figure 5.5.7 as an example, we set up the three collages.

We need to check "circuit board 1, circuit board 2, circuit board 3".（Check as many copies

as you have）.

Step 1：First set the circuit board drawing coordinates.（See 5.5.1 for details）。

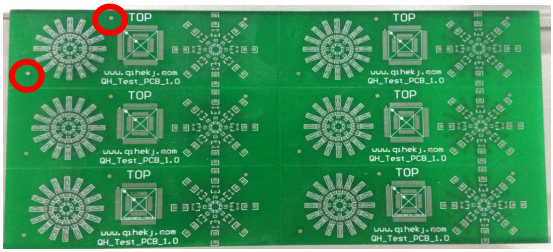
Step2:（Press 5.5.1 to set the third step）Manually move the mounting head to align the lower vision camera with the drawing coordinates of "circuit board 1, circuit board 2" and "circuit board 3" respectively. See figure 5.5.8.

You can complete the mark point setting of the triplex, don't forget to save the file.

General imposition, suitable for a small number of imposition, reference point must be the standard reference point.

The disadvantage is that the mark points of each board are correct and time-consuming, but with high precision.

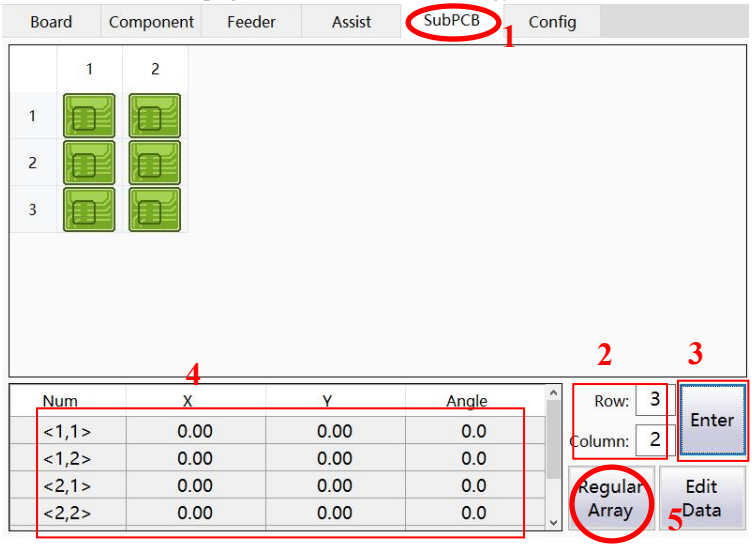
5.5.3 SubPcb



Picture5.5.9

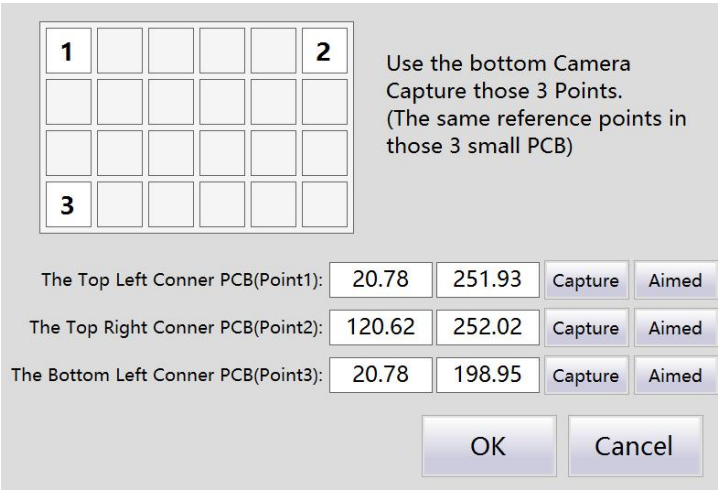
We use figure 5.5.9 as an example to set up the six imposition.

Step 1：First press a board to set the mark point（See 5.5.1 for details）

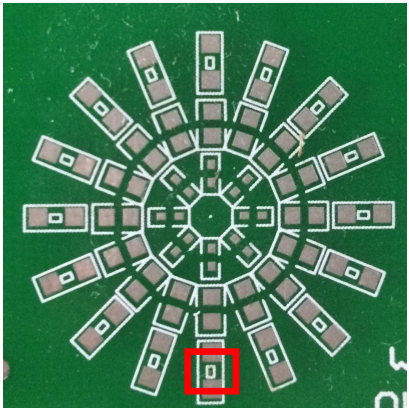


Picture 5.5.10

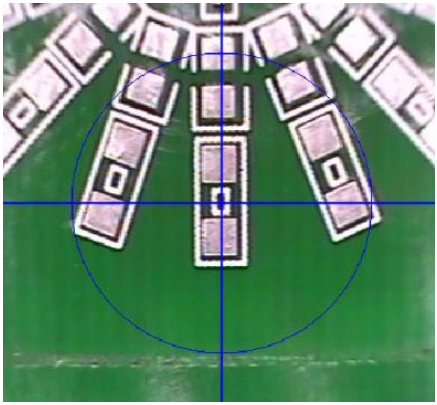
Step2，See figure 5.5.10，Point① SubPCB，Enter the edit imposition interface。②As a practical matter, enter the number of rows and columns,As shown in the example of 5.5.9， So let's say row number 3, column number 2.③Click the Enter button,You'll see the picture in red box 4.⑤Click the Regular Array button,nter the screen setting in figure 5.11.



Picture5.5.11

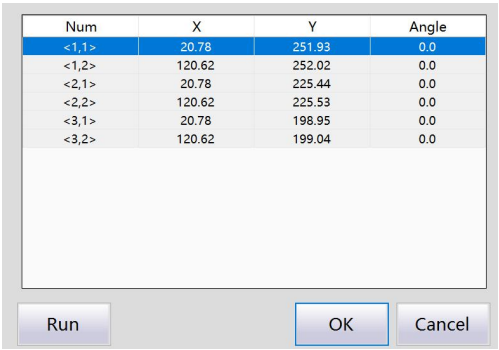


Picture5.5.12



Picture5.5.13

Step3，The same point of the corresponding subplate needs to be collected.We refer to the welding disc in the red box in figure 5.12（Note: the welding disc must be taken as the reference point）.①Manually move the mounting head so that the lower visual camera is aligned with the reference point of subplate 1, as shown in figure 5.13.Click【The Top Left Conner Pcb（Point1）】"Capture" at the back,Automatically generates this coordinate.②Manually move the mounting head so that the lower visual camera is aligned with the reference point of subplate 2.Click【The Top Right Conner Pcb（Point2）】"Capture" at the back，Automatically generates this coordinate.（Note: the second board and the first board are on the same line.）③Manually move the mounting head so that the lower visual camera is aligned with the reference point of subboard 3.Click【The Bottom Left Conner Pcb（Point3）】"Capture" at the back，Automatically generates this coordinate.（Note: the third board and the first board are in the same column）。The result of setting is shown in figure 5.11, and then click ok to enter the screen of figure 5.14.



Picture 5.5.14

Step3，Click start, and the system corrects the check point for each panel. For individual coordinates, if the system cannot be automatically corrected, we click "camera positioning", then adjust the coordinates, and then click "grab coordinates". Click ok to complete the coordinate correction.

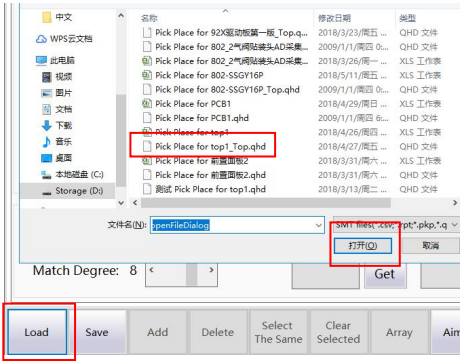
Array imposition, suitable for a large number of imposition, and no mark point or mark point is not standard.

The disadvantage is that the machining error of the circuit board leads to the accuracy deviation. The advantage is that only one mark point is required.

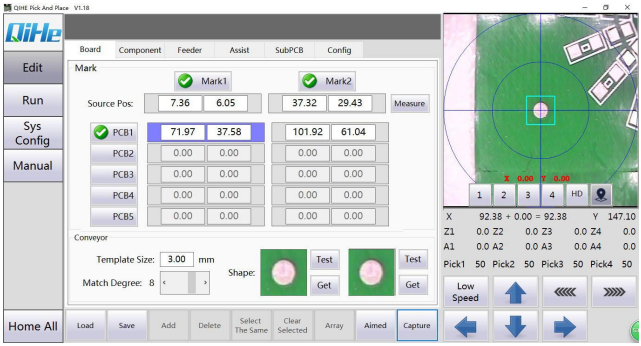
6 SMT process

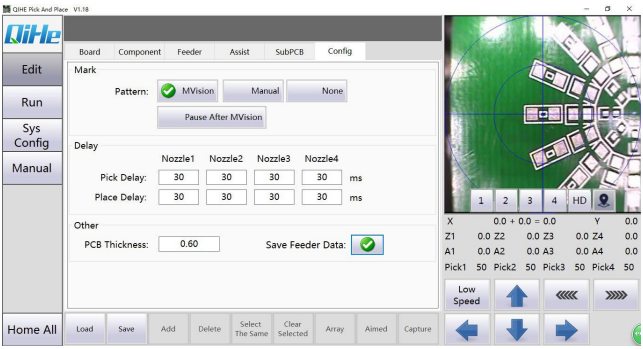
1，Select the appropriate suction nozzle according to the size of the component。

2，Open the software, origin location, load file coordinates.

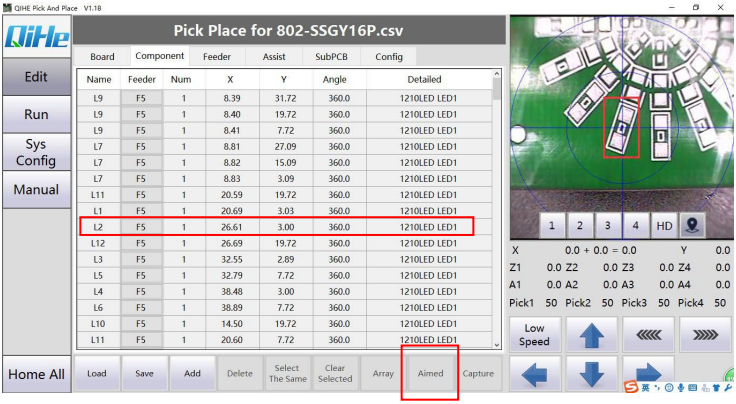


3，Set mark point coordinates and delay parameters（It's usually 30 to 80 milliseconds）The reference point identification parameters can be selected according to their own situation.

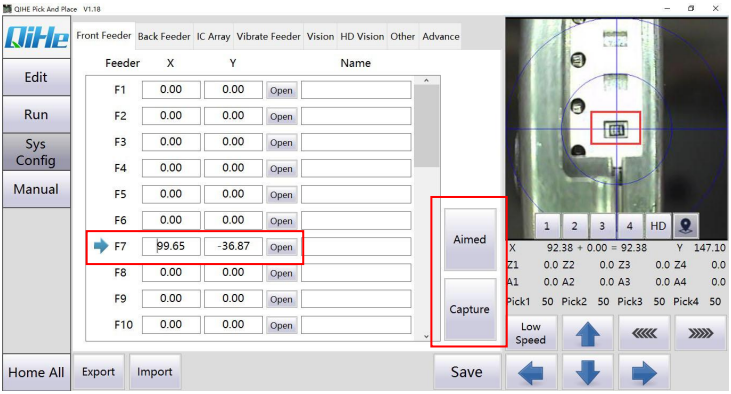




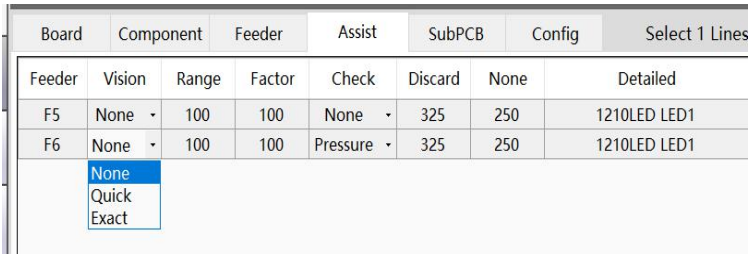
4，Select the position of the device at will and position the camera. If the position is not aligned, we need to check whether the PCB file is not set up or the mark point is set wrong.



5，Select the corresponding airfield. After selecting the airfield, the airfield position needs to be calibrated.



6，Select different suction nozzle mount different materials, some devices need to set height, speed and vision and pressure.



7，Select the patch to run and paste.

7 Preventive maintenance

1.1 Nozzle maintenance

Please check that there is no deformation or wear on the suction nozzle due to impact, and confirm that there is no debris blockage inside the suction nozzle. Press the suction nozzle with your hand to make sure it is tight. If the suction nozzle is pressed by hand, feel very tight, please use the cleaning liquid to wash the inside of the suction nozzle. Badly worn needs to be replaced with a new suction nozzle.

1.2 Cleaning of machine appearance

This equipment is precision instrument, do not use in bad environment, please keep the machine clean. Visually check the machine and feed rack for any foreign matter, if there is any foreign matter should be handled in a timely manner, brush or air gun can be used to treat foreign matter.

1.3 XY guide rail refueling

XY-axis guide rail oil, first with a cloth to remove the old grease, and add new grease.

1.4 Computer antivirus

Detoxify the computer regularly so that the company's software can run stably.

1.5 Ground protection

Industrial equipment, due to the requirements of the working environment, please use earthing protection socket. To avoid computer USB leakage or other static electricity on the machine.