



Selective Coater Series Operating Manual and Maintenance Manual

Introduction

This user manual ("Manual") is the "Selective Coater Series Operating Manual and Maintenance Manual". The manual consists of 1 volume, which describes how to use the product equipment and maintenance precautions.

Due to product improvements, etc., the description of this manual is inconsistent with the actual product. In addition, the description of this manual is subject to change without prior notice. The illustrations documented in this manual are the design of some related interfaces. There are some uncertainties, please consult your purchaser or relevant dealer.

Thank you for choosing to purchase this device, I hope our equipment will satisfy you, in order to let you fully understand and use this device, please read this manual carefully before using the device. If there is imperfection, you are welcome to teach.

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1. Overview of the device

1.1 The appearance of the device

The actual appearance of this product as shown: Figure 1-1: simple and generous appearance, strong sheet metal structure, the surface of the static spraying process.



Figure 1- 1Appearance

1.2 The size of the device

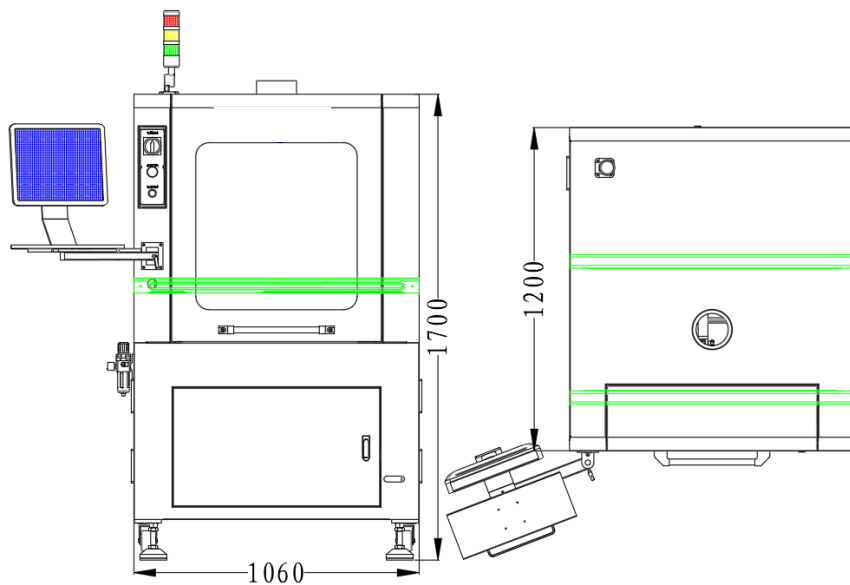


Figure 1- 2size

1.3 The location of the device unit

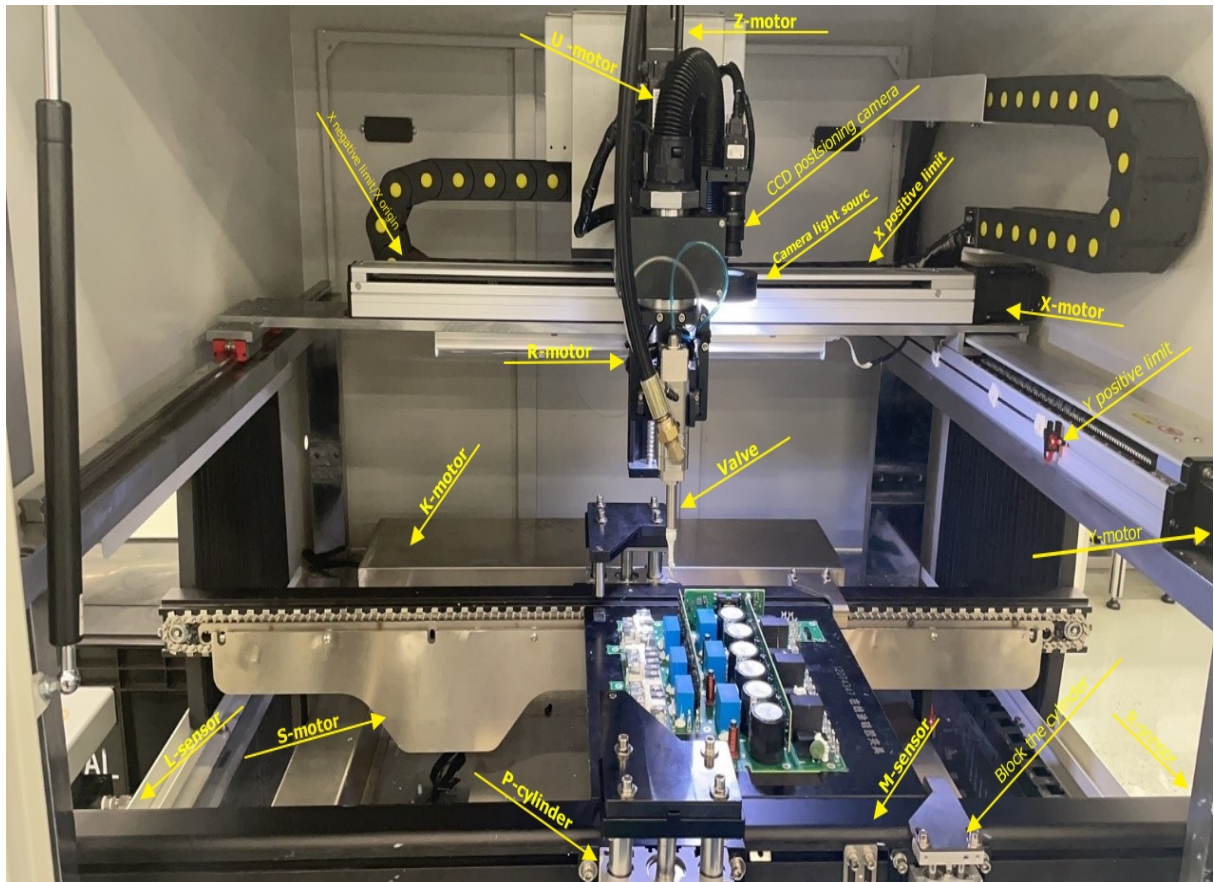


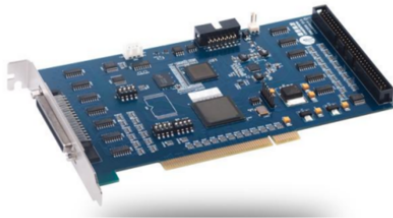
Figure 1 - 3Devices

1.4 Device hardware configuration

1.4.1 DMC5610 Six-axis Track Motion Card

The device motion control adopts the Resai DMC5610 8-axis track motion card control system, DMC5610 motion control card, can control 1-6-axis servo or stepper motor, supports 2-6 axis straight-line interpolation, any 2-axis plane arc interpolation, any 3-axis space arc/helix interpolation. The maximum pulse frequency per axis is 4MHz, and the interpolation motion has S-type speed curve, small circle speed limit, PWM vector speed follow, reverse gap complement, maximum acceleration limit and other functions.

DMC5610 Six axis track card



- Six axis stepping/servo motor control
- Six axis incremental encoder
- High performance linear interpolation
- High performance two axis linear interpolation
- High performance two axis linear interpolation .spatial spiral interpolation .conical interpolation. cylindrical line interpolation .etc
- Support small line segment continuous interpolation
- High performance continuous trajectory look ahead control
- Excellent speed curve planning, continuous speed can be set
- High speed position latch, comparison and trigger
- PWM speed following, reverse clearance / pitch compensation

Figure 1 - 4Track Card

1.4.2 Track card supporting hardware

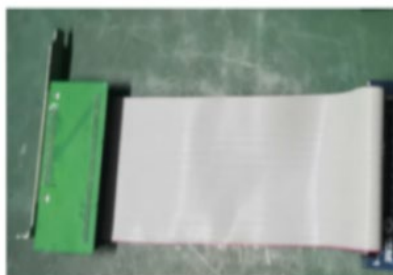
AC-3600Junction box



36 channel I / O expansion module



Adapter board acc64t068



cable



Figure 1 - 5Companion hardware

1.5 Features of the device

1. X, Y, Z,U,R five-axis motion, accurate implementation of a variety of circuit boards to avoid connectors and other non-coated selective coating process.
2. Dot coating, linear coating, arc coating, circular coating, vertical coating and other multi-tracks can be achieved. High density complex circuit board coating process can be completed.
3. The device has a system accuracy of ± 0.02 mm and a position feedback signal connected between the servo driver and the motion control card for high-precision positioning coating.
4. This equipment has a high-speed, reliable and stable transmission and control system.
5. Carry 1 dispenser with this device. High-precision and complex circuit board coating process can be achieved.
6. The device has a smart electric width narrow function (the input plate width is electric adjustment in place).
7. Programming: Software programs have data input for manual teach-in programming.
8. Full line docking: The device is equipped with SMT industry standard SMEMA interface, which can be signal docking by other devices.

1.6 Technical parameters of the device

Model	HMH-830
Rack form factor	L1050mm*W1200mm*H1700mm
Device platform	T20mm steel plate is flat chrome plated
weight	650KG
How it is controlled	Research China Industrial Control Machine and Motion Control Card
The operating system platform	Windows7 64-bit
Programming	Manual instruction
The number of program stores to run	1000+
PCB transmission height	± 100
Delivery speed	0-5000mm/Min
Direction of delivery	L-R
Transfer motor	Stepper motor
PCB width range	50-450mm
The conveying width adjustment method	Smart electric adjustment

Adjust the drive mode	Stepper motor and double precision wire rod
X, Y, Z, U, R-axis drive mode	Fuji Servo Motors and Precision Wire Rod Modules, Japan
X, Y, axis maximum operating speed	800mm/s
The maximum operating speed of the Z-axis	300mm/s
X, Y, Z, U, R axis positioning accuracy	±0.02mm
The gun valve is deflected	Servo motor
Number of gun valves	1
Gun valve type	Optional
PCB board size	50-450mm
PCB component height	±100
Product positioning	Block the cylinders and position the cylinders
Cleaning function	The software comes with a cleaning function
Lighting function	The device comes with lighting
Detection function	The device comes with a UV detection light source
power supply	220V/50HZ
Total gas source	4-6KPa
Total power	1.8KW

2. Instructions for operation

The device operating interface is divided into two parts: one is composed of a computer monitor software operating interface, and the other is composed of the power start, emergency stop switch and computer start switch on the device body.

2.1 Hardware interface

As shown in Figure 2-1 below, the hardware (machine itself switcher) operator interface.

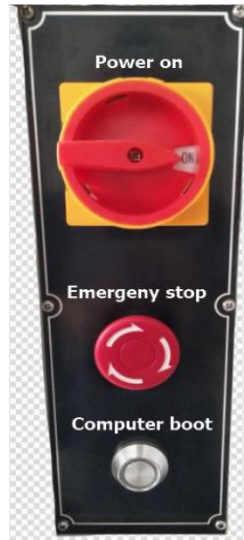


Figure 2- 1panel

we can see from the image above, the interface is simple and practical. The main functions (top to bottom) are:

- a) **Power start:** Each time after the computer starts, you need to press the power start button, so that the device power, so that it works properly. In the event of an abnormal condition on the device, the device can also be stopped by power starting.
- b) **Emergency stop switch:** When the device abnormal situation, such as card board, abnormal operation, alarm, etc. , we can take the emergency stop switch to stop the device, thus playing the role of protecting the device.
- c) **Computer start:** The start switch of the equipment industrial controller. Because it is a click switch, each time only click on the switch, do not repeat the point movement, so as not to cause the industrial control machine burned out.

2.2 Software interface

The opening of the software Press the "Computer Start" button after the external electrical access to the device, and after the industrial control system is fully turned on, find the coating system control software icon on the system  desktop. As shown in Figure 2-2.

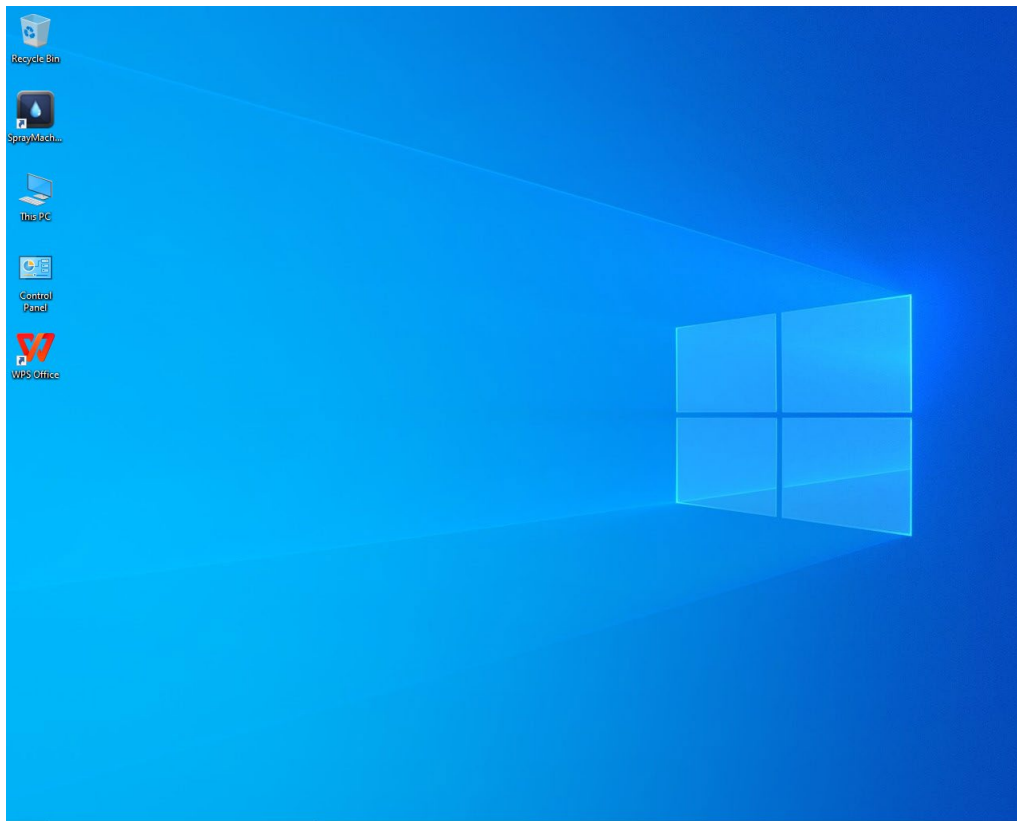


Figure 2- 2 The software is opened

Once found and opened, the software is opened as shown in Figure 2-3, and a series of alarm messages pop up when the device is not powered on.

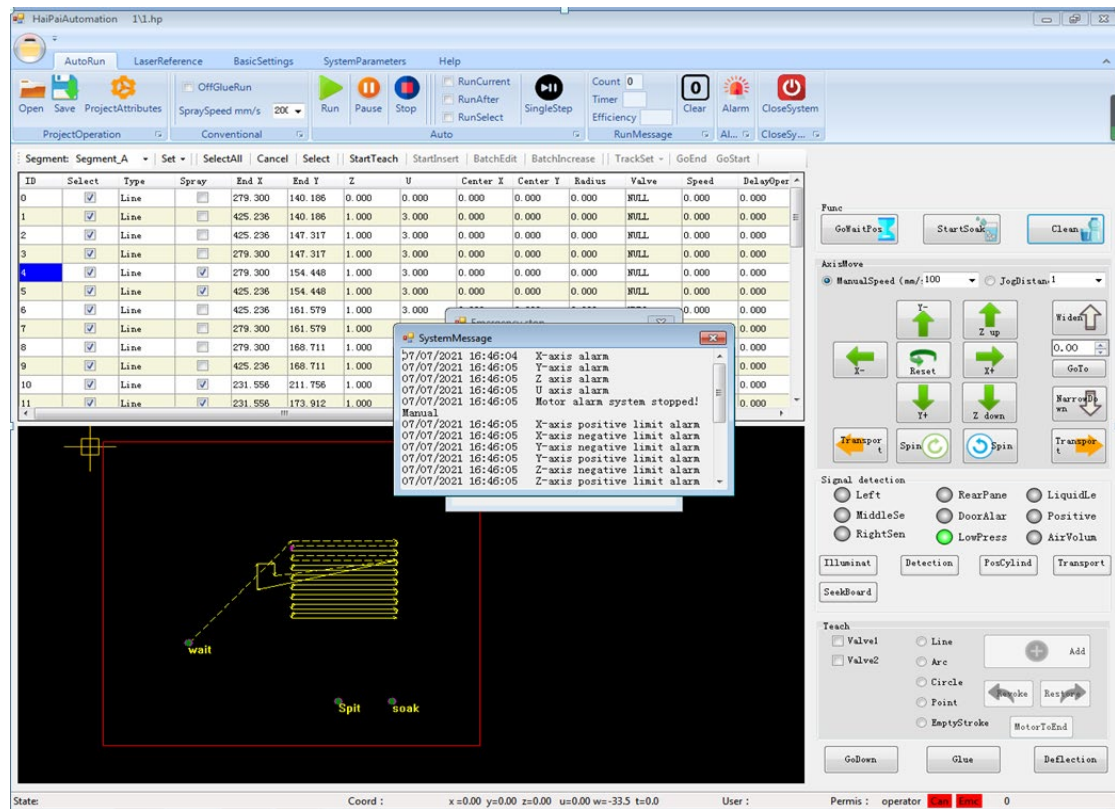


Figure 2- 3 Input to login permissions

The equipment operator can turn on the power supply of the equipment, close the pop-up window, close the window-back interface as shown in the following image;

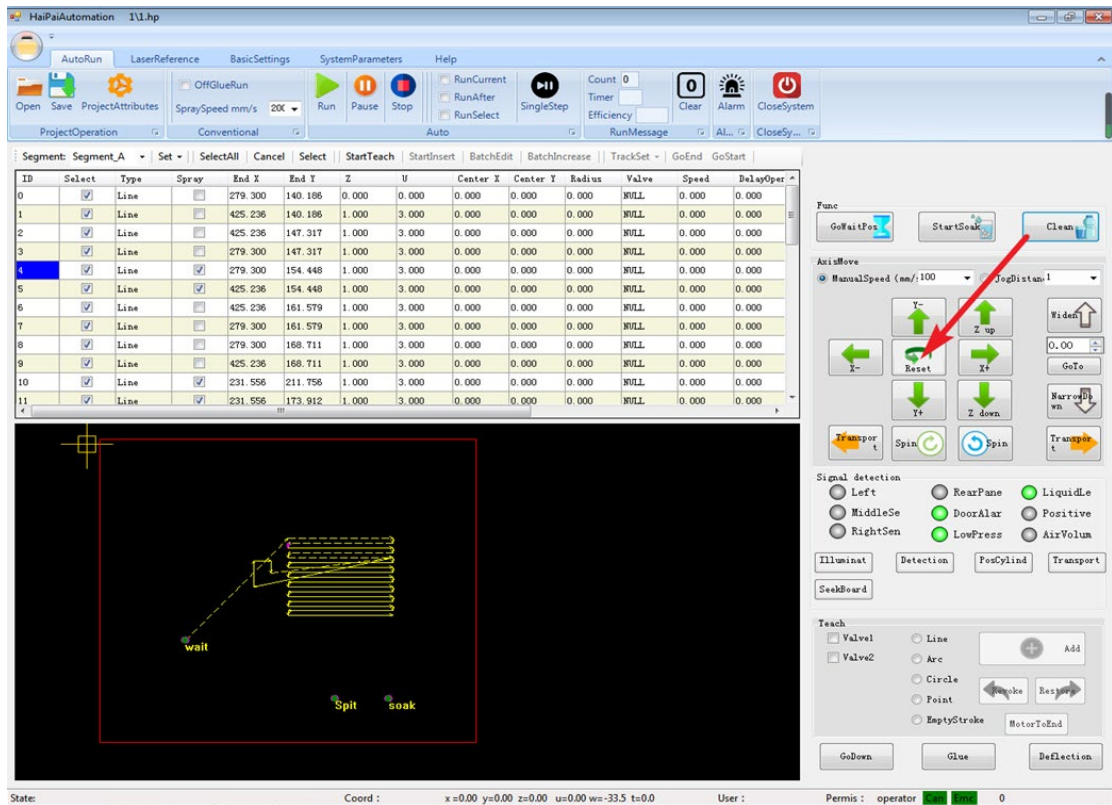


Figure 2- 4 Device reset operation

The device in the interface without reset clicking the device axis arrow key, the device axis can not move, at this time the operator can click the "reset" button in the image above to reset the device once. The device axis can be moved when the device reset is complete and the device axis arrow key is clicked.

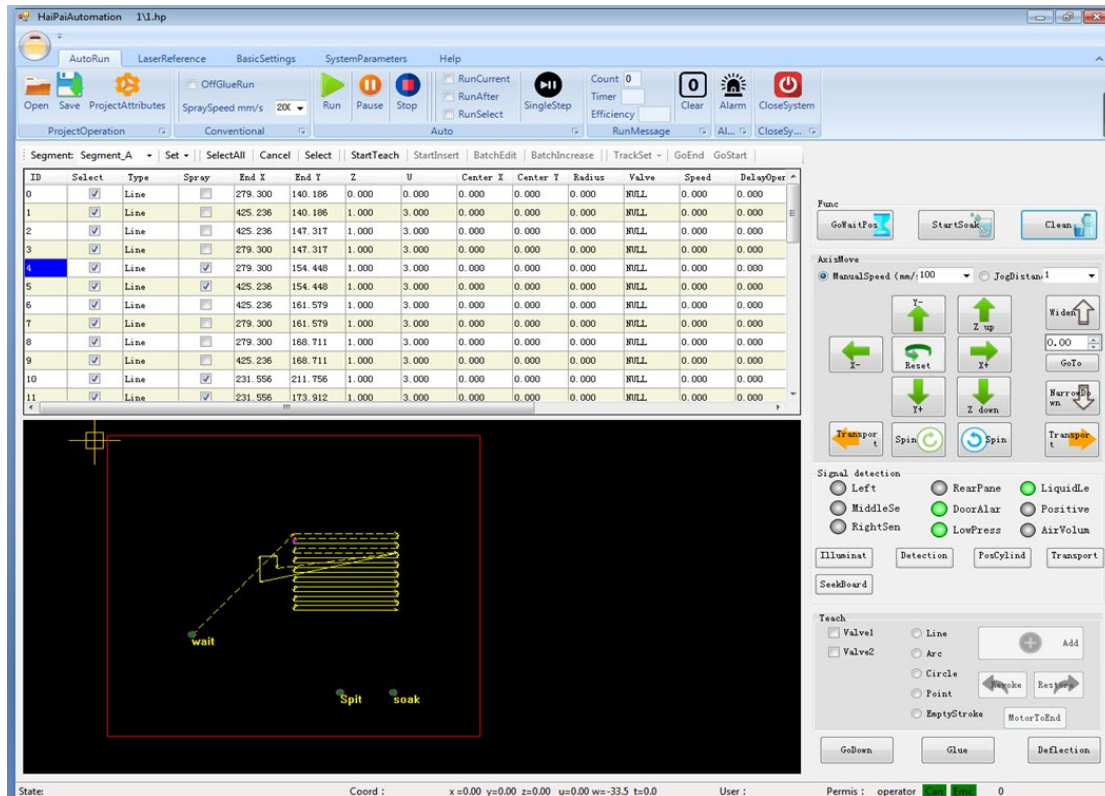


Figure 2- 5 Software main interface

The operator can click on the "Login" option below the help option to pop up the user login dialog box as shown in Figure 2-6. Select Sign in users in one of the input boxes above and enter the permission password in the box below. 1231-Administrator Initial Permission Password: 1231, wht Administrator Initial Permission Password: wht, 12312 Administrator Initial Permission Password: 12312. Specific permissions can be assigned to subordinates by a superior administrator by reference to the following figure.

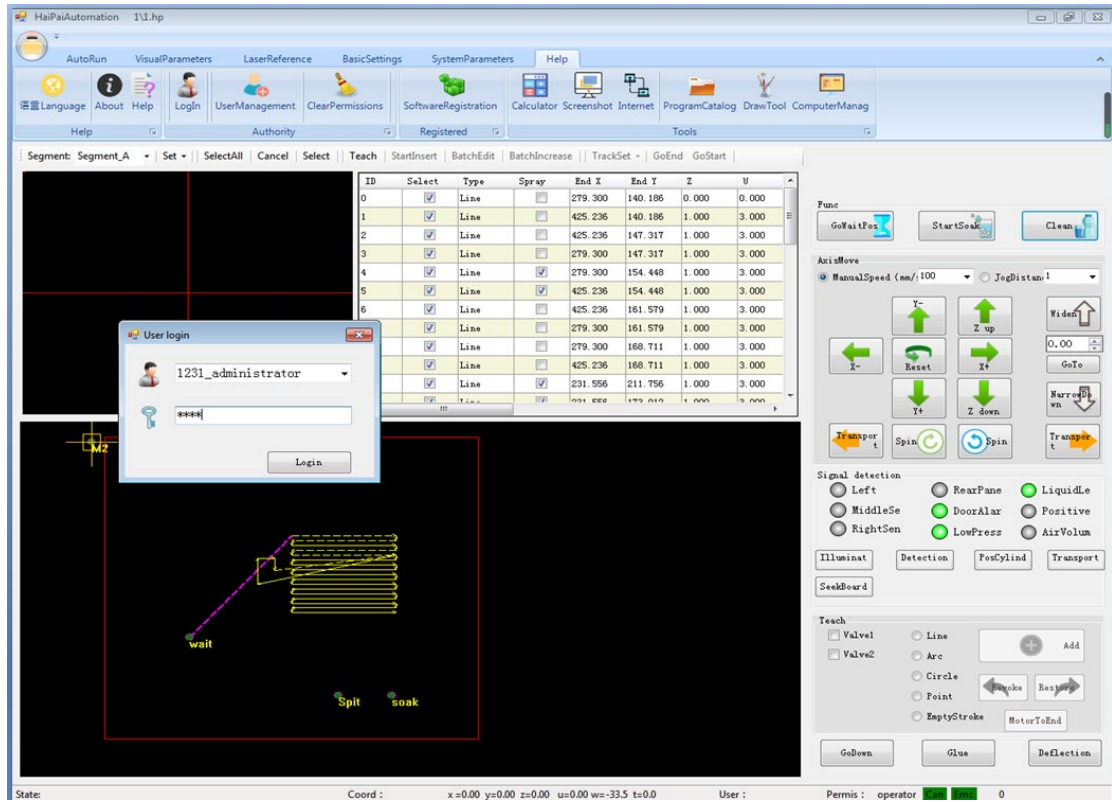


Figure 2 - 2permission input

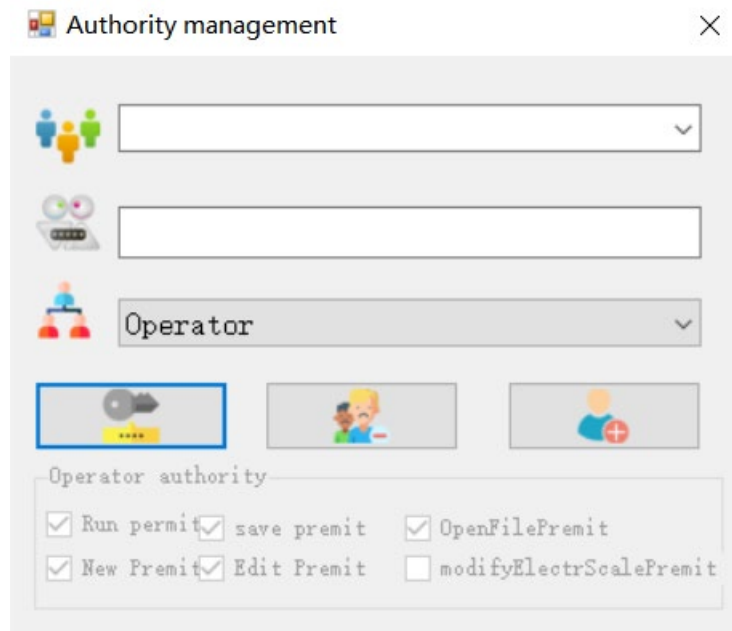


Figure 2- 7 Permission assignment

3. Introduction to software features

The software interface is mainly divided into 7 regions;1,parameter settings bar,2,CCD camera image,3 track information bar,4,manualdebugging function area,5,trackimage,6,signal detectionarea,7,switchfunction,8,gun valve functionarea,9,equipment status informationarea, such as: figure 3-1.

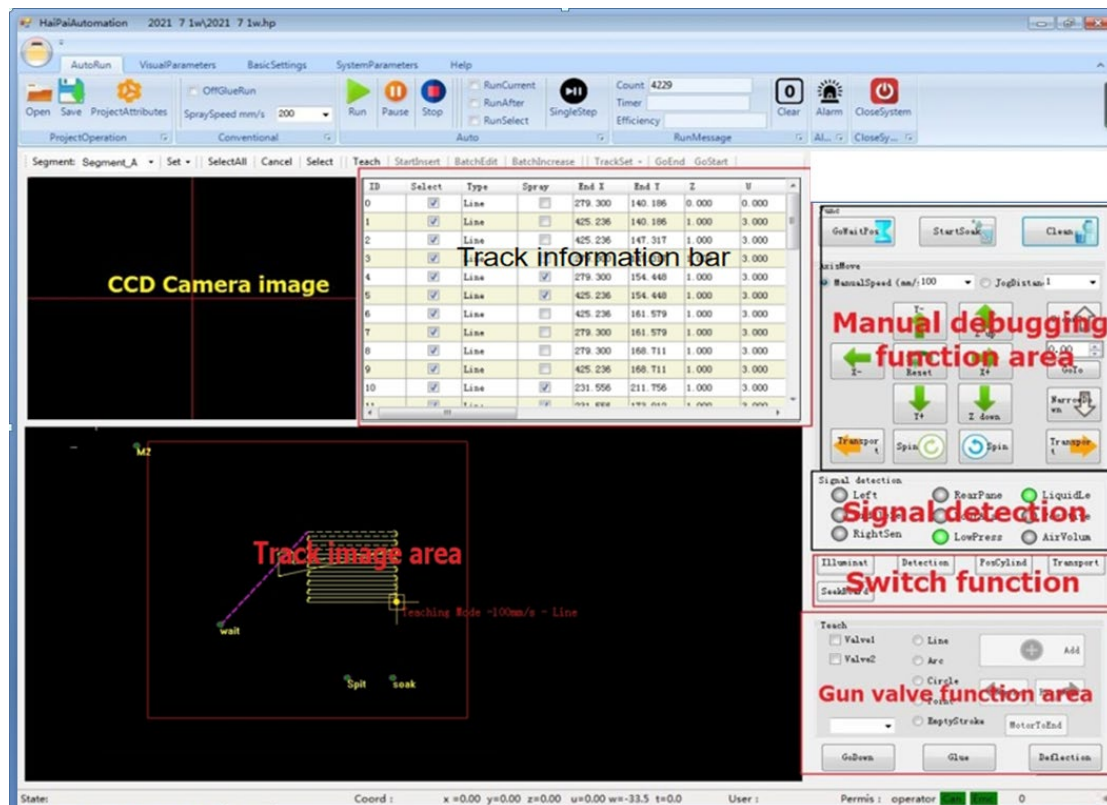


Figure 3- 1Partition

3.1 The parameter settings bar

The system parameter settings bar includes: the operation of the device, some basic settings of the device, the parameters of the device system and the help function. As shown in Figure 3-2.

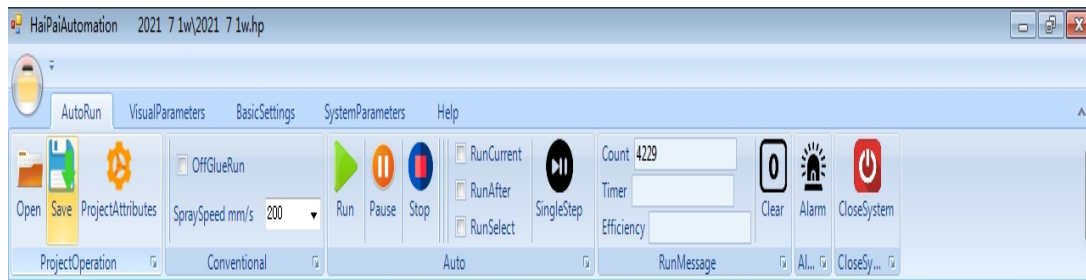


Figure 3- 2settings

3.1.1 Introduction to the device run settings feature

1. **Empty run out glue:** Click to start running after checking this function, the device will be based on the edited track of the simulation run, will not spray the product processing, this function can observe the edited running track and the desired spray area there is a large position deviation and consistency if inconsistent operators can modify the edited track
2. **Spray speed:** The speed at which the equipment moves during spraying processing, with a speed range of 0-600mm/S. The higher the number, the faster it will run.

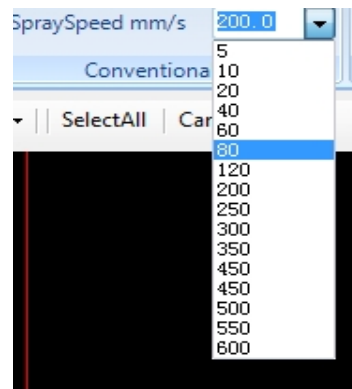


Figure 3 - 3Speed change

3. **Start running:** After editing the desired run track and confirming that the track is ready, click this button and the equipment enters the production processing state.
4. **Stop:** The operator needs the device to stop building for other reasons You can click this button to stop the device from running.
5. **Run the current track:** Check this item after selecting one or more tracks, click this button device to spray the checked track.

6. **Post-Run Tracks:** Click the Step Button after selecting a track, and the device runs all tracks after the selected track.
7. **Run Select Tracks:** Click "Step Run" device to run the current track when selecting a track, and select all tracks between the beginning and end of the device when multiple tracks are selected, regardless of how many in the middle or whether there is a check.
8. **Step-by-step:** After checking the track run type, click this button to start the device track run.
9. **Yield count:** Counts one of the product's outputs.
10. **Single block time:** Record the working time required for the current product.
11. **Yield speed:** An hour's output is calculated based on the time required for a product.
12. **Count Zero:** This button emptys all displayed count values in the run information bar.
13. **Alarm:** Click this button to view the device alarm information, red indicates an alarm signal.



Figure 3 - 4

14. **Shut down the system:** Click this button to exit the device's operating interface and stop the enabling signal of the device drive.

3.1.2 Visual parameters

Visual parameters are a parameter option that appears after the device is equipped with a CCD positioning camera, and the main function of this parameter option is used for CCD positioning camera, function settings and parameter adjustment. After the device is equipped with CCD camera, the device has the dispensing program error correction and certain correction function to ensure the positioning accuracy of dispensing.

Visual parameters: including mark point settings, camera parameters and image sample parameters read by the camera.

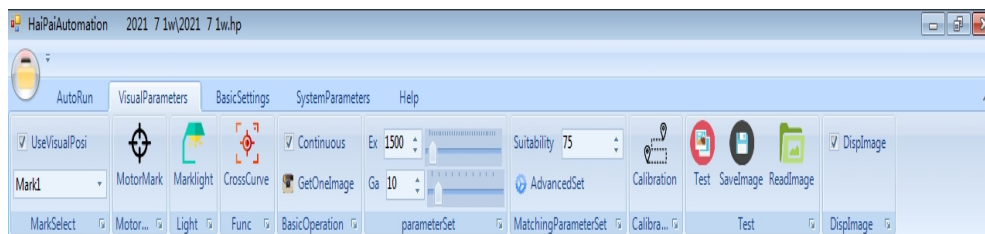


Figure 3- 5options

1. **Use visual positioning: Position the product position and correct the trajectory** using the CCD camera.
2. **Mark1:** Set an anchor point, click on the small triangle to see and switch to the second anchor bit and Mark2.
3. **Motor to Mark:** After mark point setting is complete and Mark point is selected, click this button to move the opportunity to the location of the selected Mark point.
4. **Mark Light Source:** This button is the camera light source that the device is equipped with, and click this button to turn the device camera light on or off. The camera light source is shown in the following image:

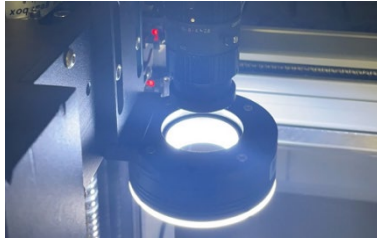


Figure 3- 6assembly

5. **Crosshairs:** When the camera clicks this button on the resulting image, a crosshair appears in the middle of the image, making it easy to see if the positioning is a center point.
6. **Continuous Graphing:** Select continuous graph option device phase opportunity to read the product in real time and get the image.
7. **Get a single sheet:** Click this button device camera to get a separate picture of the current product.
8. **Exposure:** In the device in a relatively low-light operating environment, for the camera to achieve a better imaging effect can be appropriate to increase or decrease the exposure, with the mouse drag amnion and adjustable.
9. **Gain:** The camera gain can be adjusted appropriately when the device exposure does not meet the camera imaging effect.
10. **Match:** The higher the accuracy of this parameter setting, the higher the setting will affect one pass rate of the product. The lower the parameter setting, the higher the pass rate, but setting too low may result in a mis-pass. It is recommended to take a more reasonable value.
11. **Calibration:** Click on the calibration pop-up below interface in the interface according to the instructions for operation, after the operation click to save to the project file.

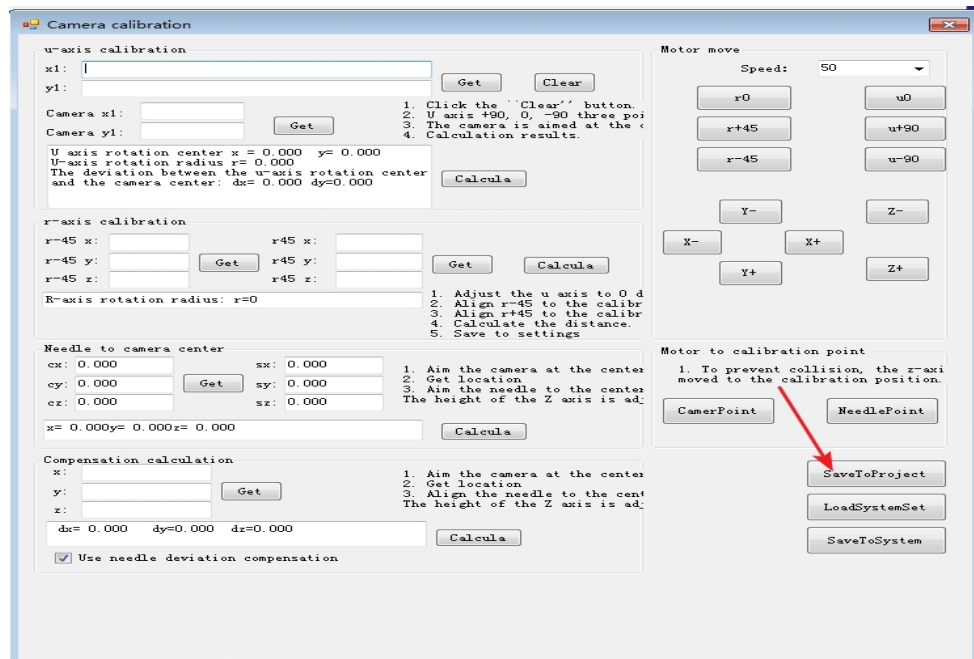


Figure 3- 7calibration

12. **Test:** Click the test button to test the edited Mark point to see if the outline of the Mark point is complete and clear.
13. **Save pictures:** Click this button to save the images the camera has read, making it easy to access the observation next time.
14. **Read Pictures:** Click this button to open the book or save the mark point picture information before.
15. **Display image:** Displays the image read by the camera.

3.1.3 Basic settings

The basic settings are the waiting point, the immersion point, the spitting point and the immersion parameters. As shown in Figure 3-4.

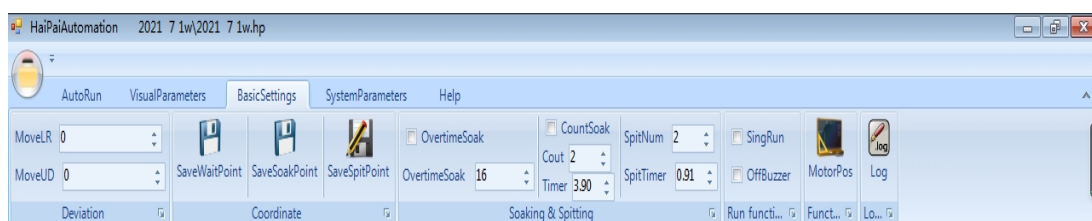


Figure 3- 8settings

3. 1. 2. 1 Introduction to the basic setup features:

1. **Save wait point:** A wait coordinate bit after the device resets, which can be set on its own based on the usage of the device.
2. **Save the immersion point:** Prevents the gun valve glue from curing and clogging the gun valve and sets a gun valve immersion point, which is set at the immersion tank and to achieve the immersion effect.
3. **Save the spitting point:** During the gun valve immersion process, there will be diluents and waste into the front of the gun valve to prevent thinners and waste spraying on the product, so before spraying need to automatically remove the waste liquid and set a point, this point is set to the spitting tank and to prevent the waste liquid splash.

3. 1. 2. 2 Soaking spit parameters settings and options:

1. **Time-out immersion:** After "check time-out immersion", the device waits for the board to reach a time-out immersion time during operation (the time can be set on its own) after the device spray valve will automatically move to the set "soak position" for automatic immersion.
2. **Number of immersions:** After "checking the number of soaks" during the operation of the device, after running the set number of times (the number of times can be set on their own) the device spray valve will also automatically move to the "soaking position" for immersion. The number of times the "Spitting" gun valve has made a full spitting action (the number of times can be set on its own).
3. **Spitting time:** The time at which the gun valve makes each spitting action (time can be set on its own).
4. **Single run:** After checking this item, it stops working after the autorun bar clicks start running the device only once.
5. **Turn off the buzzer:** Check this to turn off the whistling of the device buzzer.
6. **Motor coordinates:** Click on the motor coordinates under the interface motor coordinate location information bar, servo drive has been connected to the feedback signal, select the current coordinates and feedback coordinates to observe whether the two coordinate position coefficients are consistent, the bit difference should be 0, if the difference is too large, it may be a circuit failure or motor driver parameters set errors and servo position deviation.



Figure 3- 9coordinates

- Log view:** Click the log view button to open the device's current device status log information, and click the next to the history log button to turn on the device's past history log.

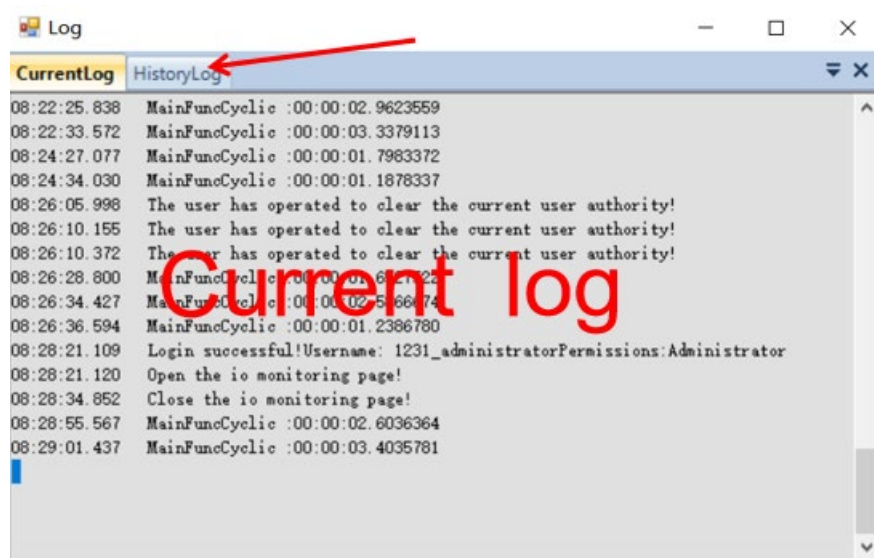


Figure 3- 10documents

3.1.4 System parameters

System parameters: including device system settings,I/O testing and coordinate verification three categories. System parameter settings are mainly used to set some functional parameters of the equipment control system.

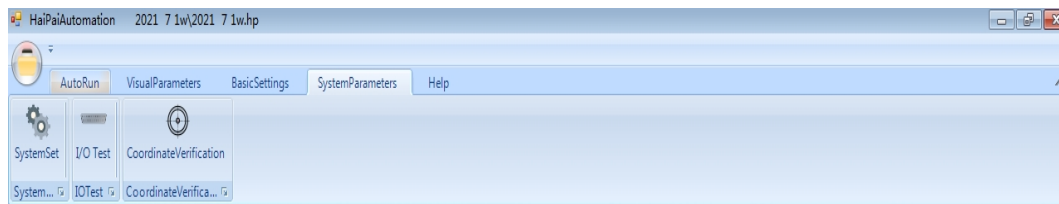


Figure 3- 11parameters

3.1.4.1 I/O test

IO testing is mainly used to test the testwindow of all IO signal points of the device, so that users can more quickly determine the location of the device fault signal, red is the signal status.



Figure 3- 12 IO interface

3.1.4.2 The parameter settings

In the system settings below mainly include: system parameters, device functions and click parameters settings.

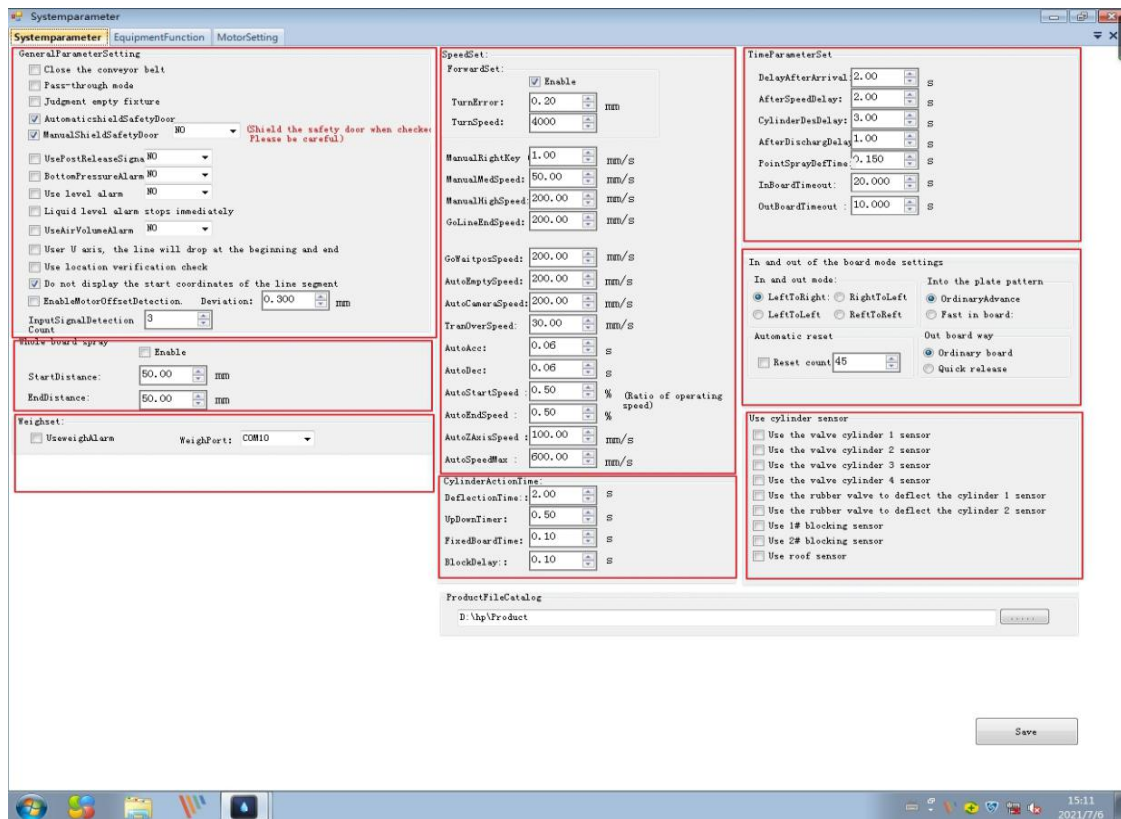


Figure 3- 13parameters

3.1.4.2.1 General parameter settings

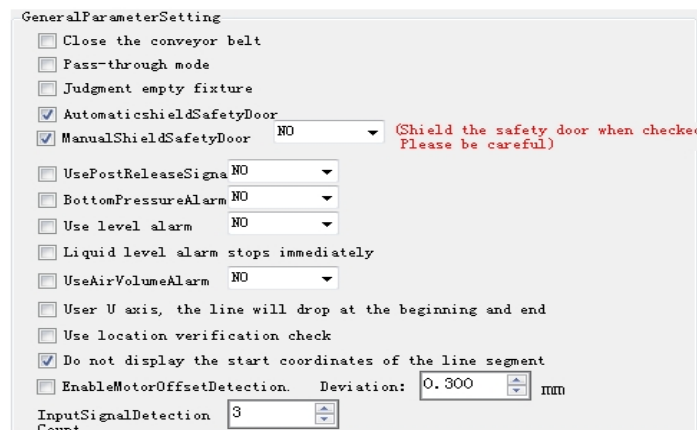


Figure 3- 14parameters

1. **Turn off the conveyor belt:** Check this item and the device conveyor chain will not rotate when reset and run, this function is used mostly in equipment testing and stand-alone production.
2. **Pass-through mode:** Check this item after the device click to start running equipment will always be in a waiting position, the product flows directly from the device, the device "block cylinder" open, no processing of the product.

3. **Judgement of the air fixture:** after the equipment is equipped with a judgment air fixture sensor can check this item, such as entering the equipment for the empty fixture when the fixture directly out of the equipment, such as the fixture has the product when the equipment processing the product.
4. **Automatic status shielding safety gate:** Check this item after the device enters automatic operation when the device threshold switch is invalid.
5. **Manual status shielding safety door:** Check this item after the device enters the manual run time the device threshold switch is invalid. Device testing and stand-alone use are available to turn this feature on.
6. **Use the rear section board signal:** check this function after the equipment after processing the product, the equipment needs to receive the rear section of the equipment's plate signal, the device's blocking cylinder will open, the conveyor motor began to turn, out of the finished product.
7. **Use low-voltage alarm:** The device has a low-voltage alarm function, in the process of running the equipment without air pressure timely stop work to prevent undesirable products and unprocessed products into the next process.
8. **Use level alarm:** level alarm is the amount of glue alarm, when the amount of glue is reduced to a certain amount of equipment to send an alarm signal.
9. **Liquid level alarm immediately stop:** check this after the equipment in the running process received a missing material signal immediately after the equipment shutdown alarm, if not check the equipment after receiving the missing material alarm will be processed to half of the product after the operation of the equipment in the processing of the next product automatic shutdown alarm.
10. **Use air volume alarm:** This item can be checked as needed when the device is added to the air volume switch.
11. **Drop to line first when using U-axis:** Check this feature and click Position to the specified height of the segment when using the U-axis.

12. **Use location check:** Check that the device will constantly check the device motor position and drive feedback while running when using this feature.
13. **Segment start coordinates are not displayed:** The device software interface does not display the start coordinate position of the segment in the track information bar after checking this feature.
14. **Use motor bias check:** Check this function after the device in high-speed operation, in the corner of the place equipment motor can not really reach, as long as the equipment shaft in the allowed bias range can be guaranteed.



Figure 3- 15bias

15. **Input signal detection:** Prevents missension of input signals, the more times the less missension, but too many times may also occur leakage sensing phenomenon.

3.1.4.2.2 Spray the whole board

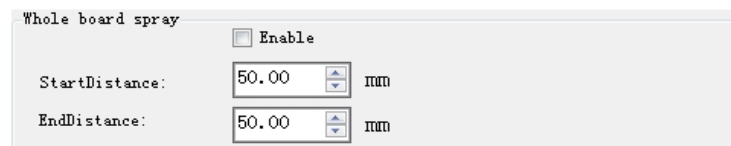


Figure 3- 16settings

Start distance: The distance from the position of the inlet electro-eye to the distance from which the product is detached from the inlet electro-eye.

End distance: The distance from which the processed product is delivered from the starting spray position.

3.1.4.2.3 Weighing settings

After the device is equipped with weighing electronic scale check this, and select the corresponding communication port, the device software in the parameter settings bar in the automatic operation options will appear under the option of electronic weighing and percent amnion, click on the settings in the following image pop-up weighing electronic scale glue setup data window. The equipment operator can set the upper, lower, total weight, and empty barrel weight of the scale according to the actual situation.

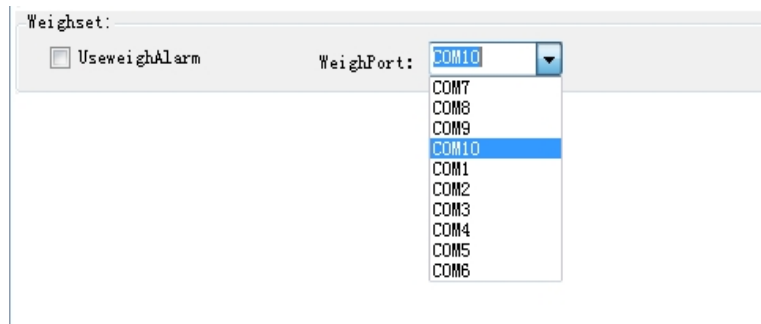


Figure 3- 17ports

1, weighing settings: in the case of the device equipped with COM oral weight weighing alarm can be checked the use of weighing alarm

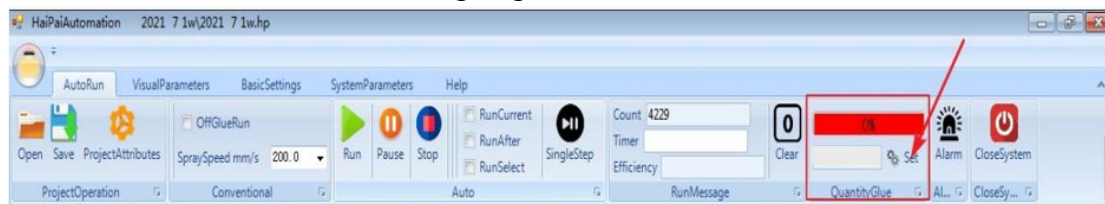


Figure 3- 18settings

2, weighing port: click on the small triangle to switch the corresponding port.

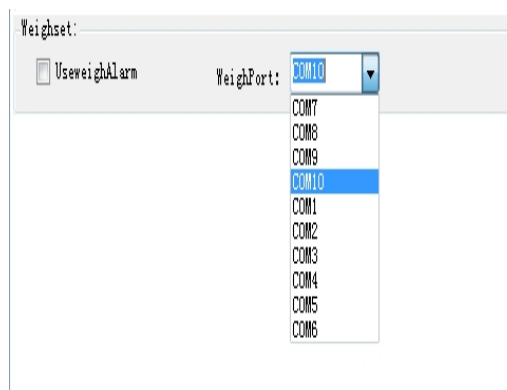


Figure 3 - 19Port Selection

3.1.4.2.4 Introduction to the speed parameter setting function

SpeedSet:		
ForwardSet:		
	☒ Enable	
TurnError:	0.20	mm
TurnSpeed:	4000	
ManualRightKey	1.00	mm/s
ManualMedSpeed:	50.00	mm/s
ManualHighSpeed:	200.00	mm/s
GoLineEndSpeed:	200.00	mm/s
GoWaittposSpeed:	200.00	mm/s
AutoEmptySpeed:	200.00	mm/s
AutoCameraSpeed:	200.00	mm/s
TranOverSpeed:	30.00	mm/s
AutoAcc:	0.06	s
AutoDec:	0.06	s
AutoStartSpeed :	0.50	% (Ratio of operating speed)
AutoEndSpeed :	0.50	%
AutoZAxisSpeed :	100.00	mm/s
AutoSpeedMax :	600.00	mm/s
CylinderActionTime:		
DeflectionTime:	2.00	s
UpDownTimer:	0.50	s
FixedBoardTime:	0.10	s
BlockDelay:	0.10	s

Figure 3- 20parameters

1. **Use Forward:** Check this feature during the operation of the device, the transition around the corner is relatively smooth, the device at high speed operation, the device jitter will be reduced accordingly, but when the dispensing accuracy requirements are high, there may be shaft movement is not in place.
2. **Corner error:** An error value that allows the motion axis to be used when looking ahead, which can be reduced for products with high precision requirements.
3. **Corner acceleration:** The motion axis runs at a lower speed at corner turns, and the next section of the run requires a reference to the set speed, which is the value of the speed increase.
4. **Manual right-click (low speed):** The speed at which the right-click axis moves in the direction. This speed is typically used to fine-tune the run track when editing the track. Fine-tuning speed requirements should be low can not be too fast, too fast easy to hit the gun valve. Low speed is the low speed button on the remote control handle.
5. **Manual medium speed:** This speed is the medium speed key speed parameter on the remote control handle.
6. **Manual high speed:** This speed is the high-speed key speed parameter on the remote control handle.

7. **Speed to the beginning and end of line:** The speed of axis movement after clicking on the location endpoint and positioning starting point in the device interface during device teaching.
8. **Automatic empty speed:** The speed at which the program runs is an empty track, which can be appropriately increased to reduce the running time of the device.
9. **Auto-photographic speed:** The device is equipped with a CCD camera, and the running-time device waits from the device for a speed value to move to mark point.
10. **Transfer speed in place: A low speed after the** program runtime product reaches the "in place sensor". A low-speed delivery value set at this speed to prevent the delivery speed from causing the product to bounce back too quickly.
11. **Auto-acceleration:** The shorter the time, the faster the device is jittery, and it is recommended to select a reasonable range of approximately 0.15-0.3S.
12. **Automatic reduction speed:** The shorter the time, the faster the device is more jittery, it is recommended to choose a reasonable range, approximately 0.15-0.3S.
13. **Automatic initial speed:** This speed is a transition speed at which the device transitions from static to dynamic, preventing the device's inertia from causing the start to move too hard.
14. **Auto-end speed:** This speed is a transition speed at which a device transitions from dynamic to static, preventing the device's inertia from causing the end action to become too aggressive.
15. **Automatic Z-axis speed:** One of the maximum speed upper-speed numeric parameters of the Z-axis when the device is running automatically.
16. **Automatic maximum speed:** The maximum speed limit numerical parameter for all axes while the device is running.

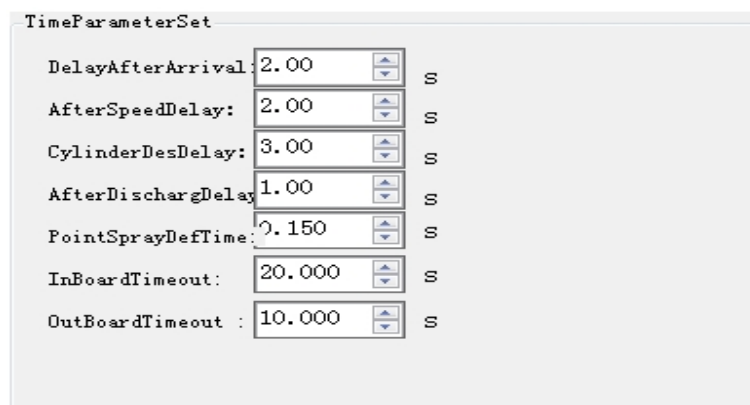
3.1.4.2.5 Cylinder action time

CylinderActionTime:		
DeflectionTime:	2.00	s
UpDownTimer:	0.50	s
FixedBoardTime:	0.10	s
BlockDelay:	0.10	s

Figure 3- 21time

1. **Deflection action time:** Equipment deflection cylinder in the addition of magnetic switch, the equipment operator can be based on the equipment deflection cylinder of a deflection action time, to the deflection cylinder to leave an action time for its position after the device movement shaft to start moving again, to prevent the movement of too fast gun valve is not in place to start work.
2. **Lift action time:** Equipment lift cylinder in order to add magnetic switch, equipment operators can according to the equipment lift cylinder a deflection action time, to the lift cylinder to leave an action time for its position after the device moving shaft to start moving again, to prevent moving too fast gun valve has not been in place to start work.
3. **Top plate action time:** equipment top plate cylinder in the installation of magnetic switch, equipment operators can according to the equipment roof cylinder of a roof action time, to the top plate cylinder to leave an action time for its position after the device motion shaft to start moving, to prevent moving too fast gun valve is not in place to start work.
4. **Block action delay:** The time to block the cylinder from closing to fully opening The equipment needs to flow out when it has finished processing a product, and the device blocks a time parameter when the cylinder is open.

3.1.4.2.6 Time parameter settings



TimeParameterSet		
DelayAfterArrival:	2.00	s
AfterSpeedDelay:	2.00	s
CylinderDesDelay:	3.00	s
AfterDischargDelay:	1.00	s
PointSprayDefTime:	0.150	s
InBoardTimeout:	20.000	s
OutBoardTimeout :	10.000	s

Figure 3- 22settings

1. **Delay in place:** The "sensor in place" senses the signal delay for a period of time while the device is running.

2. **Speed-down delay:** The time it takes to deliver for low-speed operation after it is in place.
3. **Cylinder drop delay:** When the product flows out, the "out-of-board sensor" senses the signal, and the "positioning cylinder" delay time is reduced.
4. **Late delivery delay:** When the product is finished processing out of the equipment, the product is removed from the "outboard sensor" to turn off the delivery time.
5. **Dot spray default time:** A default value for the device when it is doing point work, and the time can be changed.
6. **Time-out in place:** The "incoming sensor" senses the time when the signal is sensed to the "in place sensor". If the "sensor in place" does not sense the signal device prompts for a timeout alarm in place within the set time.
7. **Out of the board in place timeout:** equipment after processing a product out of the equipment, in the set time the equipment has not received the board signal, the device prompts the board timeout.

3.1.4.2.7 In and out board mode settings

The screenshot shows a software window titled "In and out of the board mode settings". It contains several groups of controls:

- In and out mode:** Four radio buttons are arranged in two rows. The top row has "LeftToRight" (selected) and "RightToLeft". The bottom row has "LeftToLeft" and "RightToRight".
- Into the plate pattern:** Two radio buttons: "OrdinaryAdvance" (selected) and "Fast in board".
- Automatic reset:** A checkbox labeled "Reset count" followed by a text input field containing the number "45".
- Out board way:** Two radio buttons: "Ordinary board" (selected) and "Quick release".

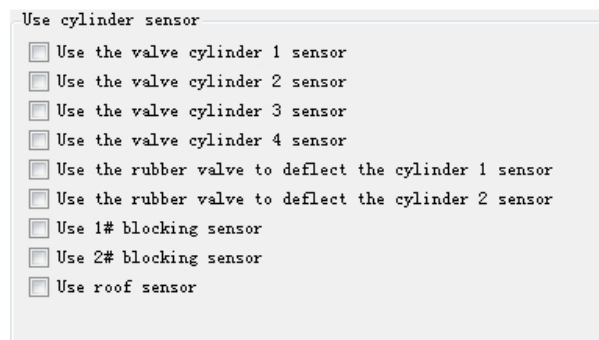
Figure 3- 23mode

1. **Entry and exit mode:** In and out of the product mode, you can choose your own according to your needs.
2. **Board entry mode:** "normal board" for the previous product completely out of the device "out of the board sensor", the latter product then into the device. "Fast feed" is when the previous product starts to flow out of the device and the latter product flows into the device at the same time.
3. **Out of the board:** "Normal out of the board" when the product out of the equipment, the product sensed "out of the plate sensor" and out of the "out

of the plate sensor" after the "positioning cylinder" drop equipment into the next product processing process. "Quick out of the board" for the product to sense the "out of the plate sensor" after the "positioning cylinder" drop equipment into the next product processing process.

4. **Auto Reset:** Check this feature During the automatic operation of the device, the device will perform a zeroing action after the device has run the process a set number of times.

3.1.4.2.8 Use a cylinder sensor



Use cylinder sensor

- ☐ Use the valve cylinder 1 sensor
- ☐ Use the valve cylinder 2 sensor
- ☐ Use the valve cylinder 3 sensor
- ☐ Use the valve cylinder 4 sensor
- ☐ Use the rubber valve to deflect the cylinder 1 sensor
- ☐ Use the rubber valve to deflect the cylinder 2 sensor
- ☐ Use 1# blocking sensor
- ☐ Use 2# blocking sensor
- ☐ Use roof sensor

Figure 3- 24Sensor

1. **Use the valve cylinder 1-4 sensor:** In the case of the installation cylinder with a magnetic switch, check for magnetic switch signal use.
2. **Use the valve air deflection cylinder 1-2 sensor:** In the case of the device deflection cylinder with a magnetic switch, check for magnetic switch signal use.
3. **Use 1 segment block sensor:** Check to use a magnetic switch signal when the device blocks the cylinder with a magnetic switch.
4. **Use a 2-segment block sensor:** In the case of a second block cylinder when the device is segmented and a magnetic switch is added, check to use a blocking magnetic switch signal.
5. **Use the top plate sensor:** In the case of the device top plate cylinder with a magnetic switch, check the use of the top plate magnetic switch signal.

3.1.4.3 Introduction to device feature options

Device feature selection is mainly used for the selective use of software or shielding some unwanted functions, so that the device software interface is more concise and clear when used.

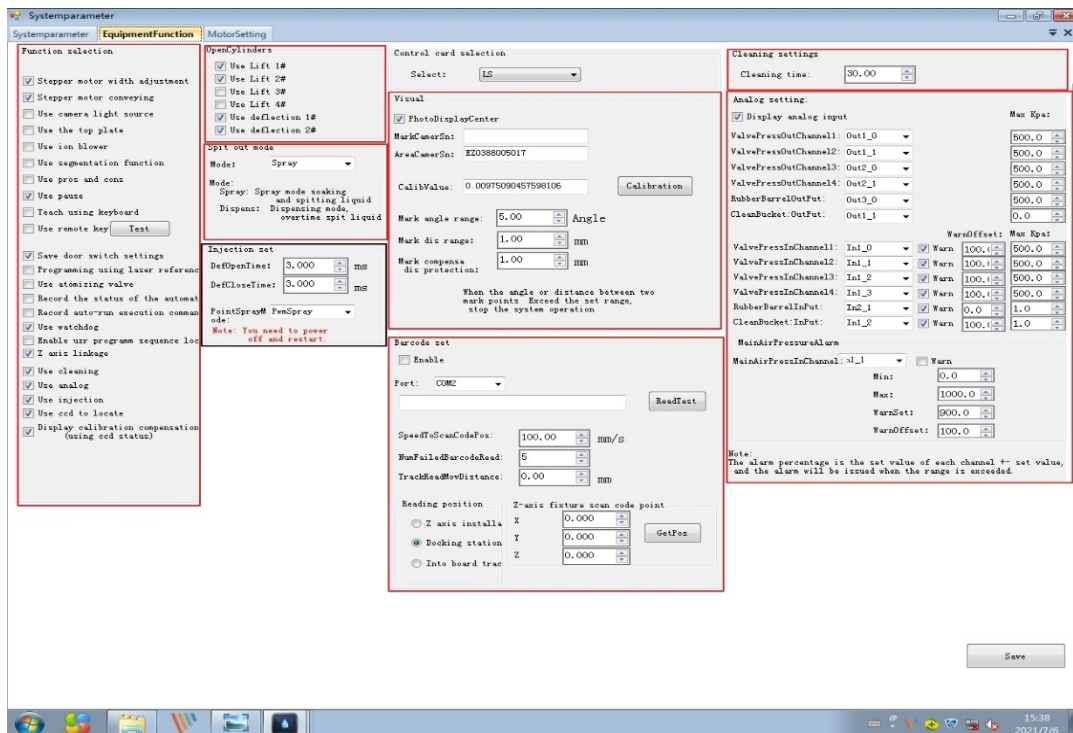


Figure 3- 25features

3.1.4.3.1 Feature selection

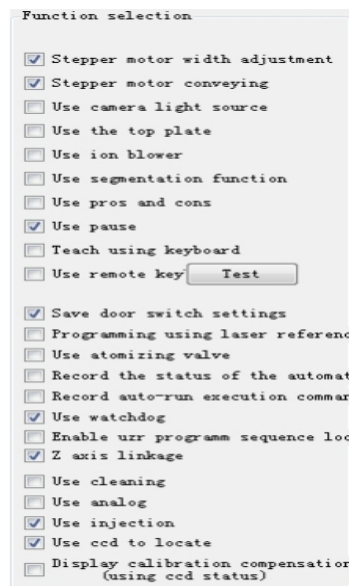


Figure 3- 26Selection

1. **Stepper motor width:** Check this item the device has an automatic width function to adjust the width of the device's conveyor rail using the electric width function at the axis direction button of the device interface, as shown in the following image.

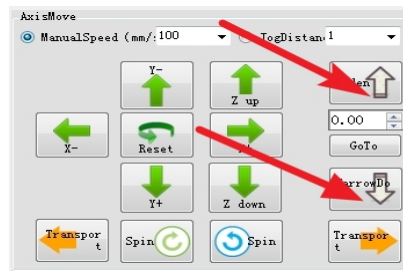


Figure 3- 27Width

2. **Stepper motor transport:** Check this function after the device stepper motor conveyor shaft in operation or point when the output pulse signal control equipment conveyor motor rotation.
3. **Using camera light source:** When the camera is added to the device, the camera has a light source, which is the camera light switch. Check the camera light source to turn on the light source when the device needs to take a picture, and turn off the light source when it is finished.
4. **Use the top plate:** The device adds the top plate positioning function to the conveyor rail and the card turns on this function to prevent the product from shaking during the process.
5. **Use an ion fan:** Check this item after the device has been fitted with an ion fan. The fan can be switched on to pump.
6. **Use segmentation:** Check this item when the equipment needs to use segmented processing products.
7. **Use the front and back:** Check this function when the device is installed to read the front and back using sensors, the positive and negative identification of the product, the software and the retrieval of the front and back processing files.
8. **Use Pause:** When you check the pause feature, a pause button appears in the device interface. While the device is running, click this button to pause the equipment machining job.
9. **Use keyboard teach-in:** Check Use this after the device keyboard can use keyboard arrow keys in the teach-in state can also achieve the editing of the running track.
10. **Using the remote keyboard: Keyboard test:** Check this function when the device is equipped with a remote control handle, and the device operator can use the remote control handle to make preliminary edits to the track.

11. **Save door switch settings:** After checking this function, the device automatically saves the threshold switch settings to the corresponding engineering file after editing the track save.
12. **Programming with laser reference points:** Check the use of this function and after the device is equipped with lasers can use lasers to track edit the product, after editing in the device interface can be laser point and gun valve position calibration.
13. **Use atomization valves:** Check this function when the equipment is equipped with atomization spray valves and equipment atomization separately controlled, and the atomized air pressure of the equipment can be turned on or off separately by signal.
14. **Record the status of the autorun process:** When checked, the device records the status and process of the device's operation after it enters automatic operation.
15. **Record autorun execution commands:** Check this and the device records the execution commands that the device is running when it enters automatic run.
16. **Using watchdog:** Check to use this function, the equipment will stop working in time in the event of a device industrial control machine crash or communication abnormality. This avoids accidents.
17. **Enable U,Z,R programming order locks:** Check that the device has a sequential action when the device is operating with this feature.
18. **z-axis linkage:** When this function is checked, the device can perform vertical dispensing from top to bottom, or vertical dispensing from bottom to top.
19. **Using Cleaning:** Check this feature the cleaning settings options that appear in this interface as shown in the following image, and the cleaning time is the cleaning fluid flushing time when using this function. And at the device interface (Figure 2), click on the cleaning will also appear in the Figure 3 interface. This function can be used by adding an automatic cleaning valve unit to the equipment.

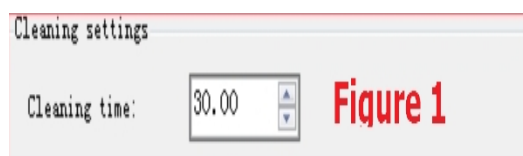


Figure 3- 28Settings



Figure 3 - 29

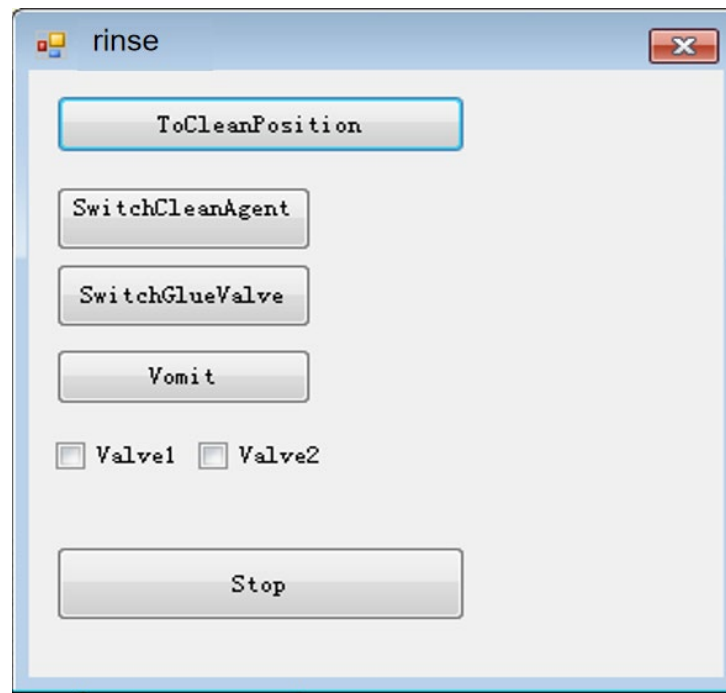


Figure 3- 30operation

20. **Using analog quantity:** Check this feature and you will see a picture in this interface such as "Figure 1" that you can use to simulate the air pressure of each route of the device when the device is fitted with an analog regulator valve, and after checking this option, the pressure setting button shown in Figure 2 will also appear under the automatic running menu of the main interface of the device. Clicking on the Pressure Settings button in Figure 2 will appear in the device interface as shown in Figure 3, adjusting the relative amplitude in the screen to adjust its air pressure size.

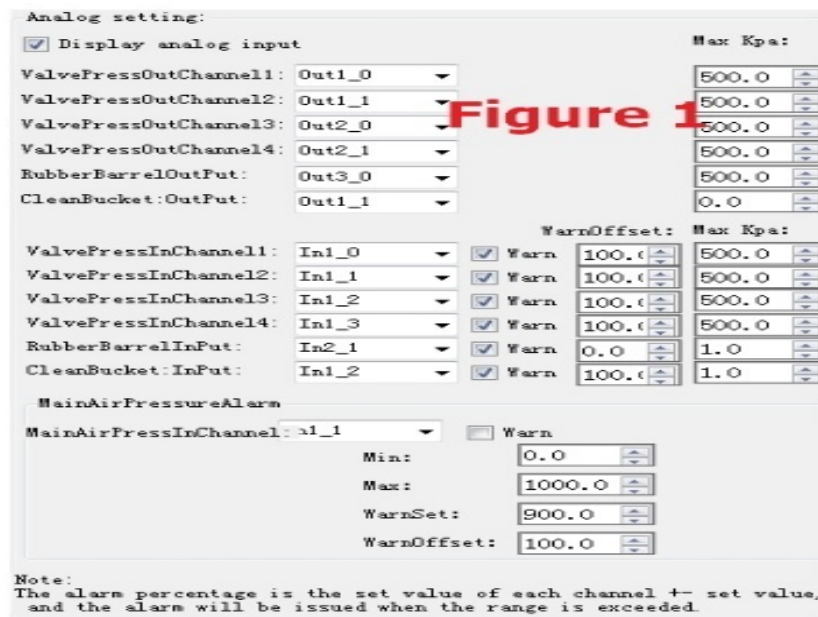


Figure 3- 31Settings

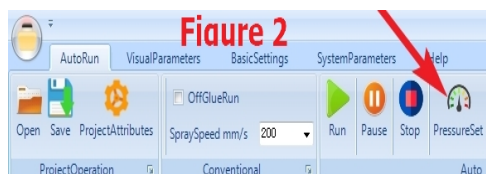


Figure 3- 32button

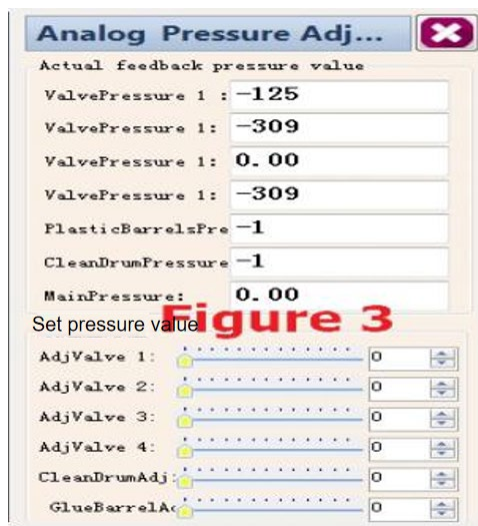


Figure 3- 33adjustment

21. **Using injection:** Checking this parameter will see the following image in this interface. This function requires the equipment to be used with a high-speed dispensing valve or a high-speed injection valve.

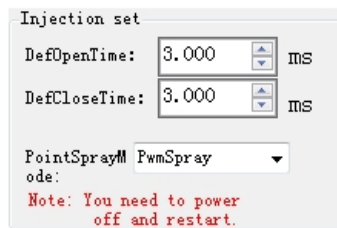


Figure 3- 34settings

Default opening time: Valve opening time (can be set on its own).

Default closing time: Valve closing time (can be set on its own).

22. **Dot spray mode:**BalanceSpray: For uniform mode, the dispensing speed varies depending on the speed of operation.

1. PwmSpray: Dispensing speed for fixed mode does not vary depending on the operating speed.

23. **Use cc positioning:** Check the interface shown below in the device interface when you use this feature.

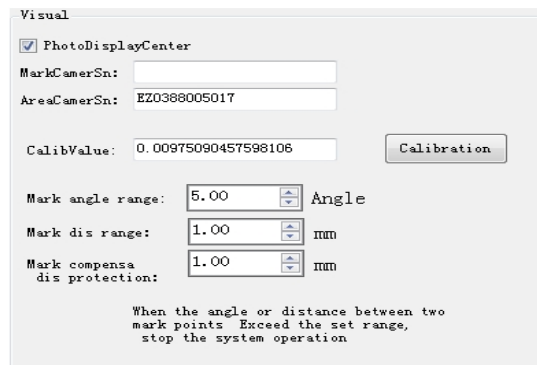


Figure 3 - 35Visual settings

24. Show calibration compensation (using CCD status):

3.1.4.3.2 Turn on the lift and rotate cylinders

Check and use the gun valve cylinder and the gun valve, and the interface shown in Figure 2 below will appear in the device interface.

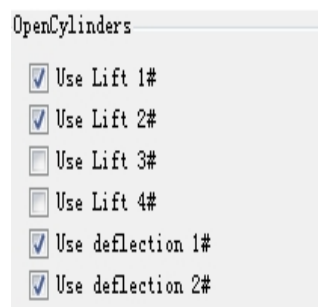


Figure 3- 36function

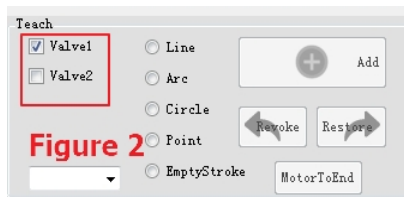


Figure 3- 37selection

3.1.4.3.3 Spitting mode •

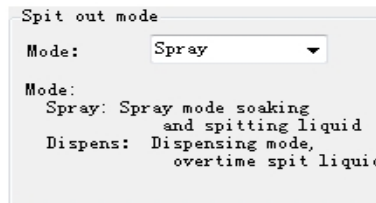


Figure 3- 38selection

Spray mode: For coating device mode, the device is operating until or out of time and needs to be soaked to prevent the gun from clogging, and after the immersion is complete, the gun valve waste fluid needs to be removed before starting work.

Dispens mode: Mode is dispenser mode i.e. the device time-out during waiting for the device to remove the glue from the gun valve for a period of time to prevent the glue from curing and clogging the gun valve. Affects the work of subsequent devices.

3.1.4.3.4 Barcode settings

This feature needs to be used only after the device has a code sweeper installed. After the device adds and turns the scanner check the use of barcoder to select the corresponding port to communicate with the device, the bar code placed in the broom location can click on the code test to read the product code word test.

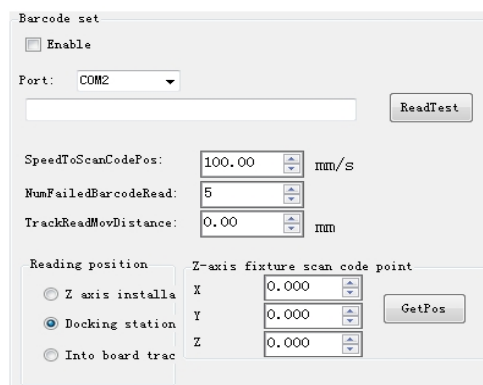


Figure 3 - 39Barcode Settings

1. **Speed to sweep position:** The speed value of the device conveyor chain turning after the product reaches the sweeping position.
2. **Number of failed reads:** The number of times the product was allowed to read the code word content.
3. **Track reading gear moving distance:** equipment into the board electric eye sense product should move into the device a period of time equipment to start sweeping code. Distance parameter from board bit to broom bit.
4. **Read position:** That is, where the broom is installed.
5. **Z-axis fixture broom point:** When the broom is installed on the Z-axis, the broom is aligned to the code word and click to get the location to obtain the coordinate information of the code word in the device.

3.1.4.4 Point parameter settings

The screenshot shows the 'Systemparameter' window with the 'MotorSetting' tab selected. It displays configuration parameters for six different motor axes: X, Y, Transport, Z, U, and Widen. Each axis has a set of parameters including acceleration, deceleration, speed, encoder output, helical pitch, origin offset, limits, and home speed. Checkboxes for 'Use encoder feedback' and 'Enable' are also present for each axis.

Axis	Axis Acc	Axis Dec	AxisSpeed	Encoder output	Helical pitch	Origin offset	Positive limit	Negative limit	GoHomeSpeed	Use encoder feedback	Enable
X axis motor settings	0.08	0.08	300.00	10000.00	20.00	-19.37	541.07	18.74	30.00	☐	☒
Y axis motor settings	0.08	0.08	300.00	10000.00	20.00	-4.10	442.43	-6.91	30.00	☐	☒
Transport axis motor settings	0.20	0.20	100.00	2000.00	100.00		90.00		10.00	☐	
Z axis motor settings	0.10	0.10	100.00	10000.00	10.00	0.00	97.00	0.00	30.00	☐	☒
U axis motor settings	0.10	0.10	200.00	36000.00	18.00	100.00	360.00	-360.00	100.00	☐	☒
Widen axis motor settings	0.20	0.20	50.00	2000.00	10.00		10.00	-500.00	30.00	☐	

Figure 3- 40settings

1. **Shaft acceleration:** The motor shaft speed-up time, the shorter the speed-up faster, but the device will run when jitter will be relatively increased.
2. **Oil reduction:** The motor shaft decelerates the speed time, the shorter the time, the faster the speed increase, but the device will also be relatively increased jitter when running.
3. **Axis running speed:** The operating speed of the moving axis when the device is operating.
4. **Shaft Encoder Output:** The amount of pulse commands that are turned by the motor shaft, which is the same as the amount of pulse instructions set by the servo driver and cannot be changed by the operator at will.
5. **Axis conduction:** The length and travel distance of the motor shaft turning a turn.
6. **Axis Origin Offset:** The axis origin sensor senses that the signal is offset a distance from the position to the axis origin.
7. **Axis positive limit:** The maximum travel position of the moving axis.
8. **Axis negative limit:** The distance parameter from the origin sensor to the negative limit.
9. **Axis back to origin speed:** The speed of action of the axis when the device resets, the higher the number, the faster the action.
10. **Use encoder feedback:** Check the device to read motor position feedback in real time at runtime.
11. **Use R/Z/U axis:** Use this motion axis after checking, do not check do not use this axis.
12. **Wide and narrow motor operating range:** Equipment delivery adjustable width range.

3.1.5 Help

Click the button in the help menu to jump to the appropriate interface and tools.

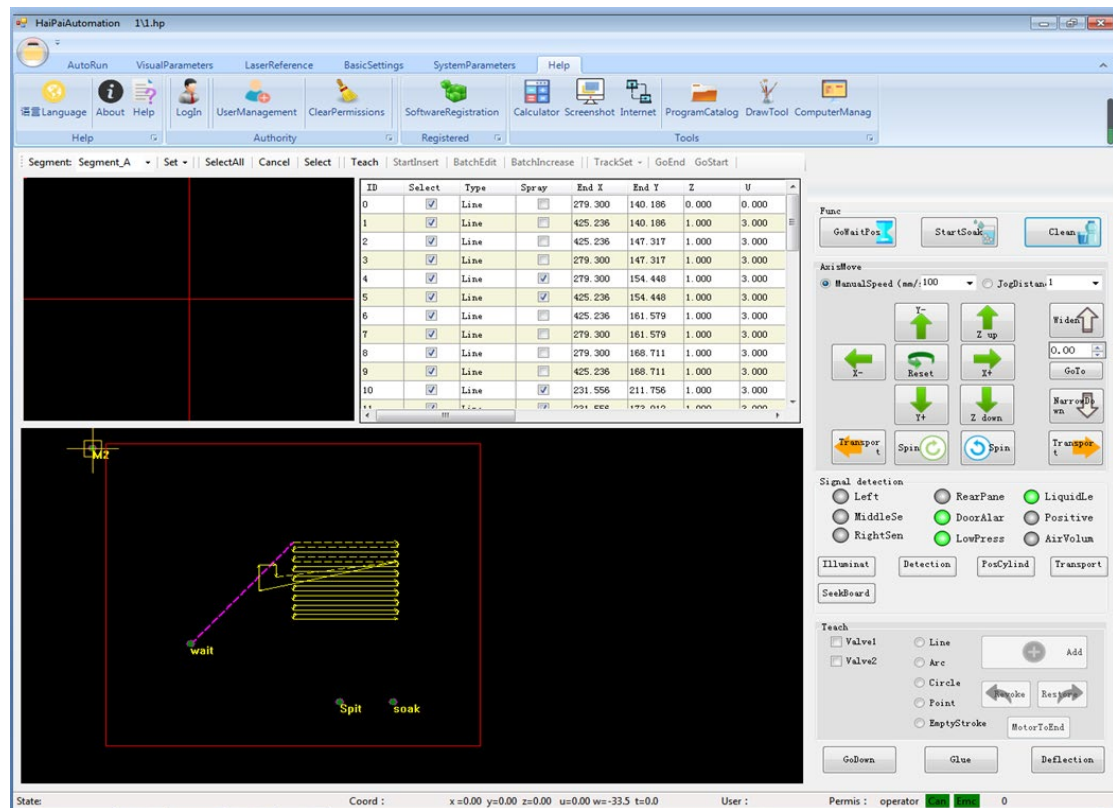


Figure 3 - 41Help

3.1.6 Manually debug the ribbon



Figure 3- 42debugging of the ribbon

1. **Back to wait point:** After the device has set the wait point, click this button to return the device's axes to the previously set location.
2. **Start soaking:** Once the device has set the immersion point, click this button to

run to the soaking point and soak the gun valve.

3. **Cleaning:** After the device has set the spitting point, clicking this button will run to the spitting point to spit the spray valve. There is also an analog adjustment function after the equipment uses the analog regulator valve
4. **Manual speed:** For the manual click axis direction on time running speed, direct click speed value can not be changed, such as to change the "manual speed" first mouse left click "manual speed" these words, and then select the corresponding speed value.
5. **Dot speed:** This speed is the distance taken per click of the mouse motion axis, the value selected for the inside of the value box, and the same as manual speed.
6. **Each axis direction:** When you click the axis direction button, each axis of motion moves in the corresponding direction.
7. **Reset:** When you click the Reset button, each axis of the device performs a zeroing action.
8. **Single-axis reset:** Right-clicking the reset button in the interface shows the following image, clicking on the option allows for a separate reset operation relative to the motion axis.

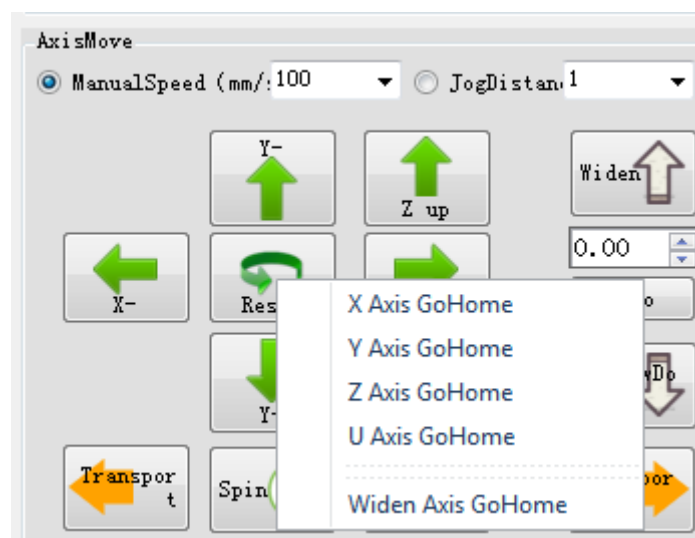


Figure 3- 43Single-axis reset

3.2 Signal detection area

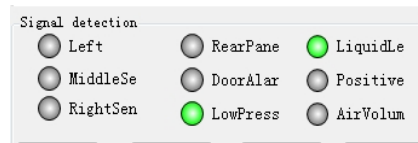


Figure 3- 44Detection

1. **Left photoelectric:** A sensor located on the left side of the device rail is generally an inlet to detect the electric eye.
2. **Photoelectric in place:** Located in the middle of the device rail.
3. **Right photoelectric:** Located at the right end exit of the equipment rail and the device's output plate detection electric eye.
4. **Rear release board:** The board signal of the equipment in the rear part of the machine is the signal of the native board.
5. **Threshold alarm:** Located at the left border of the front door of the device for the operation of the device in case of a safety incident after the operator opens the door
6. **Low pressure alarm:** This equipment has a low pressure alarm function, the air pressure sensor is located at the total air source of the equipment several air pressure gauge.
7. **Level alarm:** The device is connected to the weighing device, that is, the equipment with the electronic scale given a less glue alarm.
8. **Positive and negative calls:** The device can self-access the product front and back program path, this signal for the device to identify the positive and negative side of the product signal.
9. **Air volume alarm:** This alarm function can be used when the air volume switch is added to the exhaust port on the top of the equipment.

3.3 Switch manually



Figure 3- 45switch

1. **Lighting:** This device has lighting function Click this button to turn on the lights in the device.
2. **Detection light:** The device comes with UV lighting inspection product spray effect. Click this button to turn on the detection light.
3. **Positioning cylinder:** A positioning device that secures the position of the machining product and clicks this button to rise and fall.
4. **Conveyor motor:** Click this button and the equipment rail delivery starts to run.
5. **Plate signal: A feeding signal** from this equipment to the front machine.
6. **Top plate:** A feature added to prevent product shaking while the device is running.

3.4 Gun valve function area



Figure 3- 46function

3.6.1 Valve selection

1. **Valve 1-F1:** This spray valve needs to be checked with the valve for a moment

when teaching to edit the operating trajectory.

2. **Valve 2-F2:** This spray valve needs to be checked with valve 2 when teaching to edit the operating trajectory.
3. **Valve 3-F3:** This spray valve needs to be checked with valve three when teaching to edit the operating trajectory.
4. **Valve 4-F4:** This spray valve needs to be checked with the valve for a moment when teaching to edit the operating trajectory.

3.6.2 Mode selection

1. **Line:** Equipment is applied for straight-line spraying when the track segment type is used.
2. **Arc:** When the track segment type is used for arc spraying processing.
3. **Round:** When the track segment type, the equipment paints the circle spraying processing.
4. **Point:** The device runs as a dot action when the track segment type is point.
5. **Empty stroke:** No spraying is done when the track segment type is empty travel.
6. **Add:** Click this button to add a track in teach-in.
7. **Undo:** After adding an error when teaching, click this button to undo the previous step.
8. **Recovery:** Click this button to resume the undo track after the error is undone during teaching.
9. **Tap to end:** Tap this button device axis in the teach-in state to move directly to the end of the track.

3.6.3 Action button



Figure 3 - 47Action Buttons

1. **Drop:** Clicking on this button when the gun valve is added to the lift cylinder will lower a certain height. F8 is a shortcut.
2. **Glue:** The gun valve selected by clicking this button during device commissioning will make the glue action.
3. **Deflection:** Clicking on this button gun valve with the device adding a deflection cylinder deflects the angle by 45 degrees (angle adjustable).

3.5 Device status information

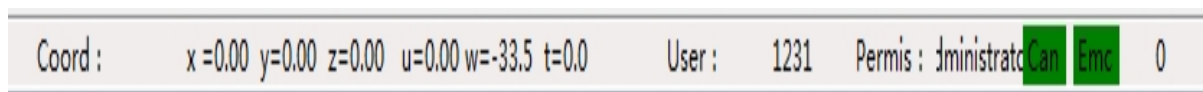


Figure 3- 48Information

1. **Device current status:** Shows what state the device is currently in.
2. **Axis position:** Displays location coordinate information for each axis.
3. **User:** The user who operates on the current device.

3.6 Less glue alarm function

After adding the weighing function and electronic scale, the equipment will connect the electronic call signal to the coating equipment, the equipment in the course of work sprayed material reduced to the set minimum amount after the equipment issued an alarm signal, notify the equipment operator to add paint.



Figure 3- 49 Scales

There are two aviation plugs on the scale, one for the power plug, one for the signal plug, the two plugs are plugged into the interface behind the device.

When using this function, you need to go into the system parameters in the parameter settings of the coating device software to check the option to use the level alarm function. Figures 3- 50

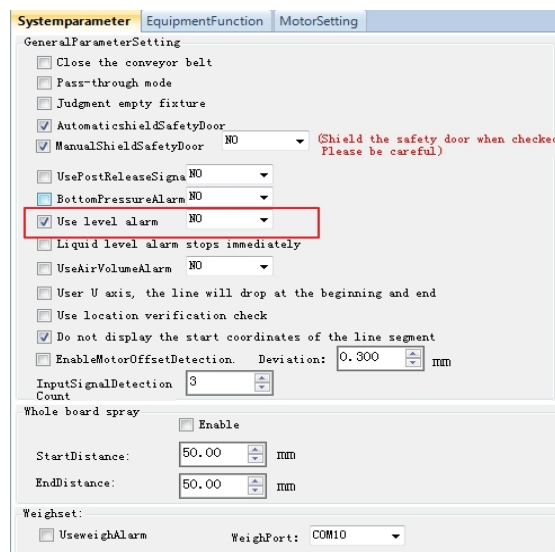


Figure 3- 52 Check the level of the alert

3.7 Introduction and use of conveying roof functions

The conveyor top plate function is mainly used in a clamping device that prevents product shaking during operation, thus preventing the device from touching the product in the dispensing gun valve causing the product position to move and the

dispensing position from being deviated. The device is shown in the following image:

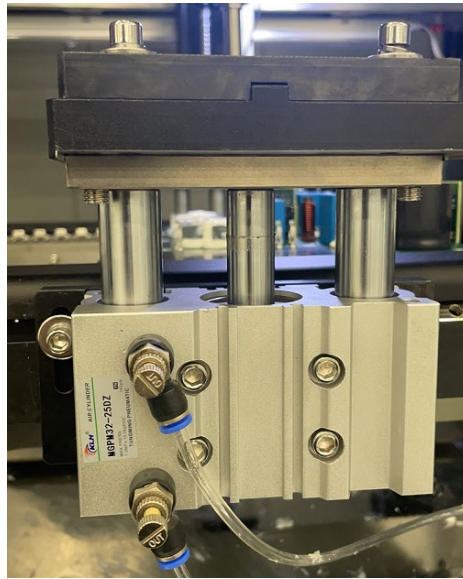


Figure 3 - 51Top Plate Unit

Top plate workflow: After the device clicks "Start Running" the product flows from the "left photoelectric" position to the device to the "electric eye in place" position, and the top plate device clamps the product positioning downwards. Equipment began to dispense the product processing, after processing, blocking the cylinder rise, the top plate device rose and let go of the product equipment transport began to turn out of the product. Complete a workflow.

3.8 Mark point's functionality and creation process

After the installation of the "Mark point" camera, the user can use the "Mark point" camera according to the needs, "Mark point" camera is mainly used in the process of equipment processing to prevent the operator from putting the product error-proof or reverse, thus damaging the product or causing damage to the equipment spray valve, serious damage to the equipment.



Figure 3- 52assembly

CCD camera workflow: When the product flows into the device, the device's "Mark Point" camera first takes pictures of the product location and direction, such as: the correct position of the product direction equipment continues to process the product. Such as: product orientation position error equipment to stop the processing of the product, and issued an alarm message to alert the operator. Such as: product model, direction are only slight deviation in position (camera view range) equipment can correct the dispensing trajectory.

The creation of the Mark point should be done on the device after the electrical reset, and obtain the appropriate operating rights operator access to the system parameters within the settings check the use of CCD camera positioning function, click the OK button below to confirm the use of CCD positioning function as follows:

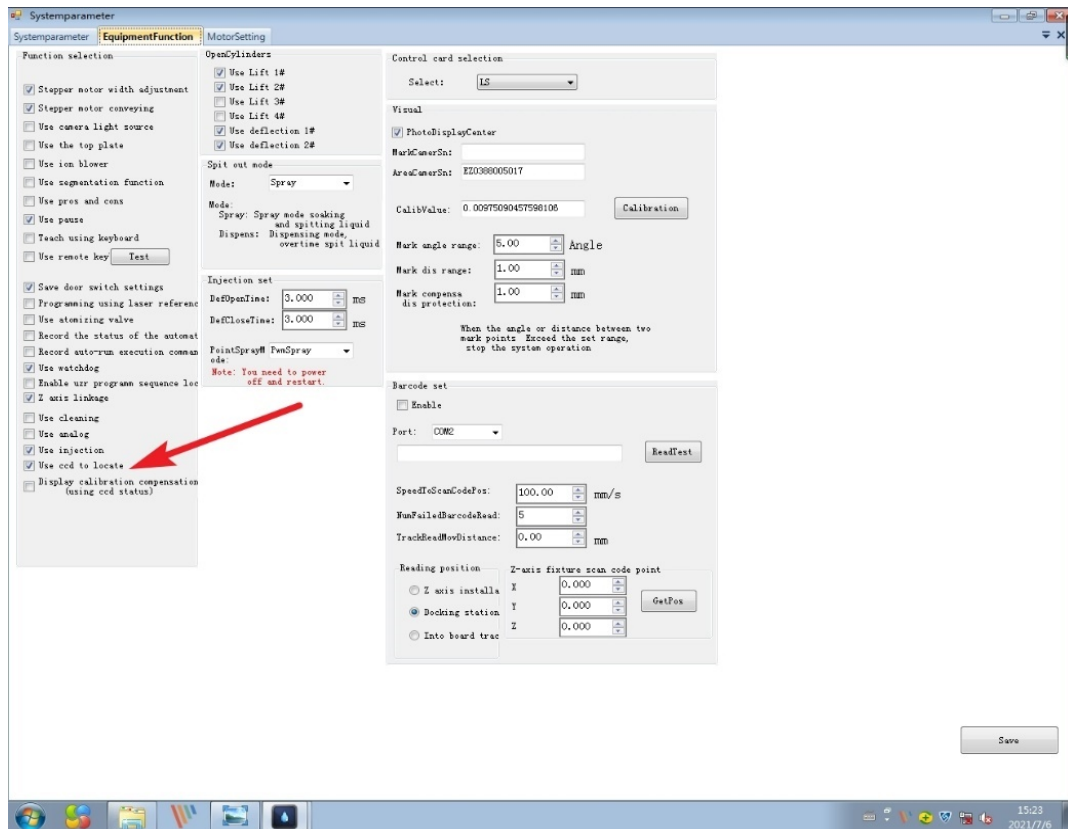


Figure 3- 53ticks the selected bit function

After completing the above steps, the device operator interface switches to the interface shown below.

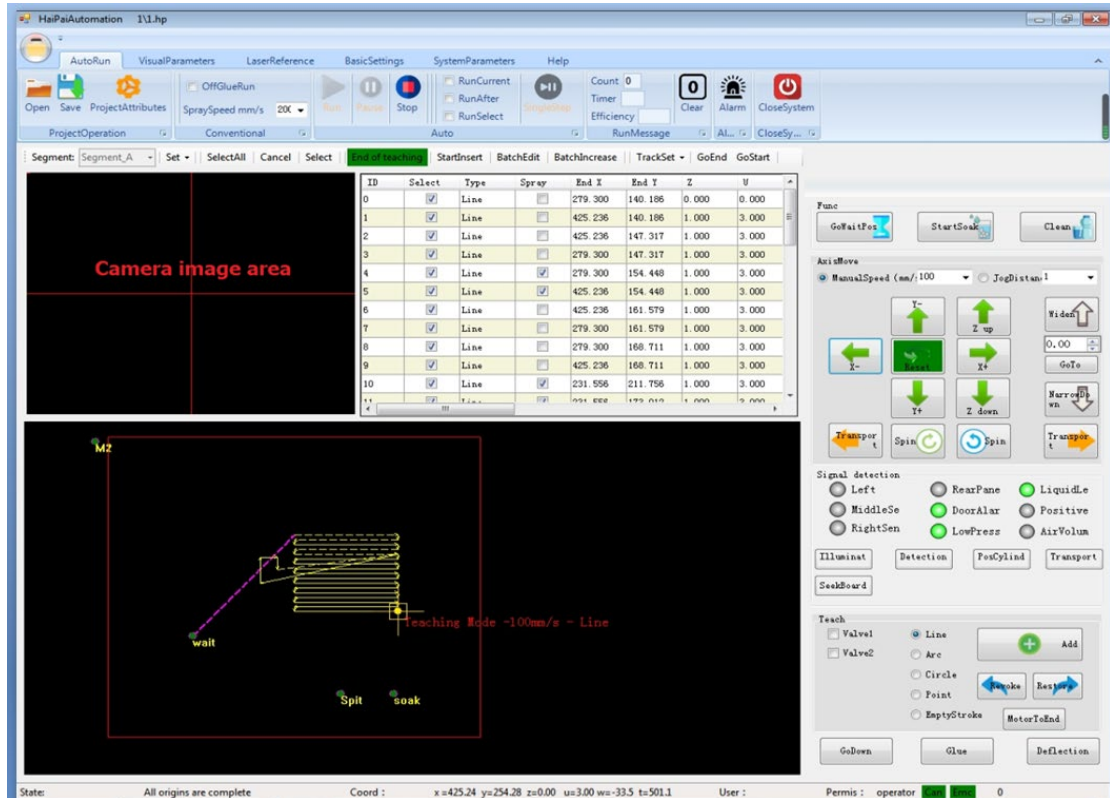


Figure 3- 54Imaging

Switch the menu to the camera parameters interface, as shown in the following image.

1. And move the motion shaft to the appropriate position of the appliance.
2. Drag the exposure time banner.
3. Drag the conversion level banner.
4. Click the Z-axis up and down button to adjust the image's clarity.

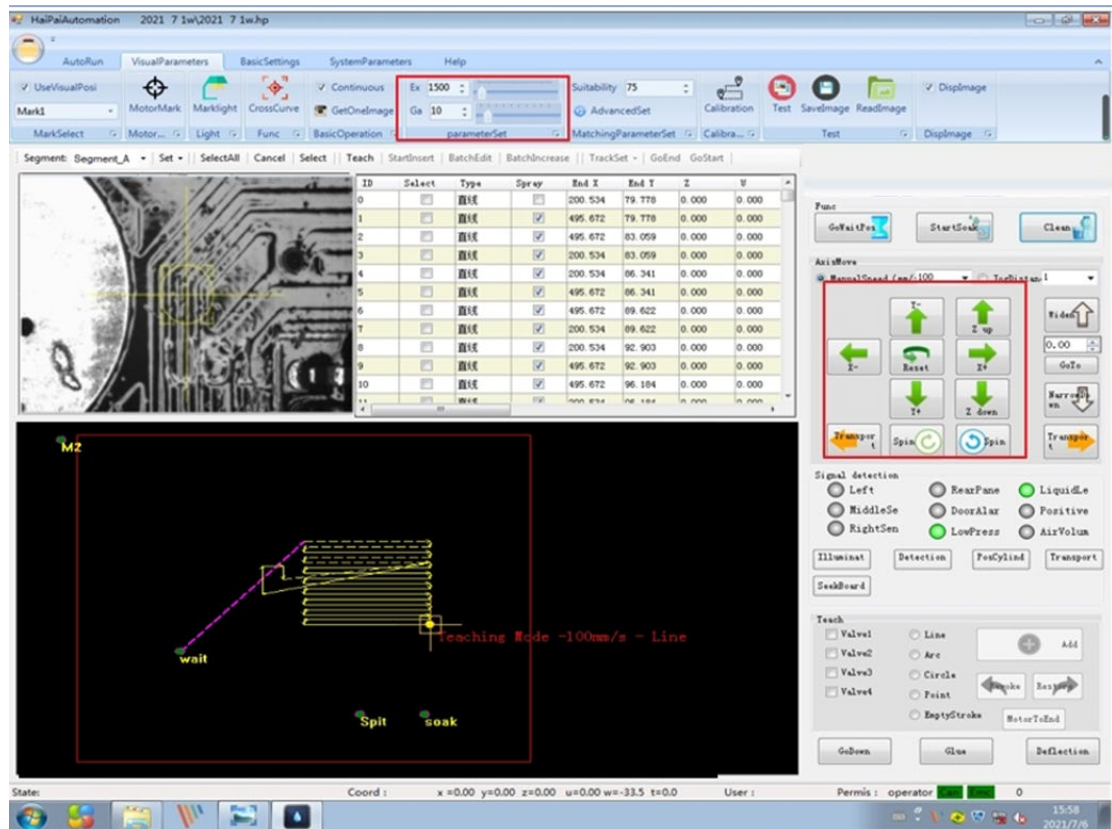


Figure 3- 55camera

1. Click the motion axis to move the camera to where you need to position it.
2. Move the Mark point cursor to where you need to set it.
3. Click mark1 under create Mark point insegment settings to create the first Mark point.

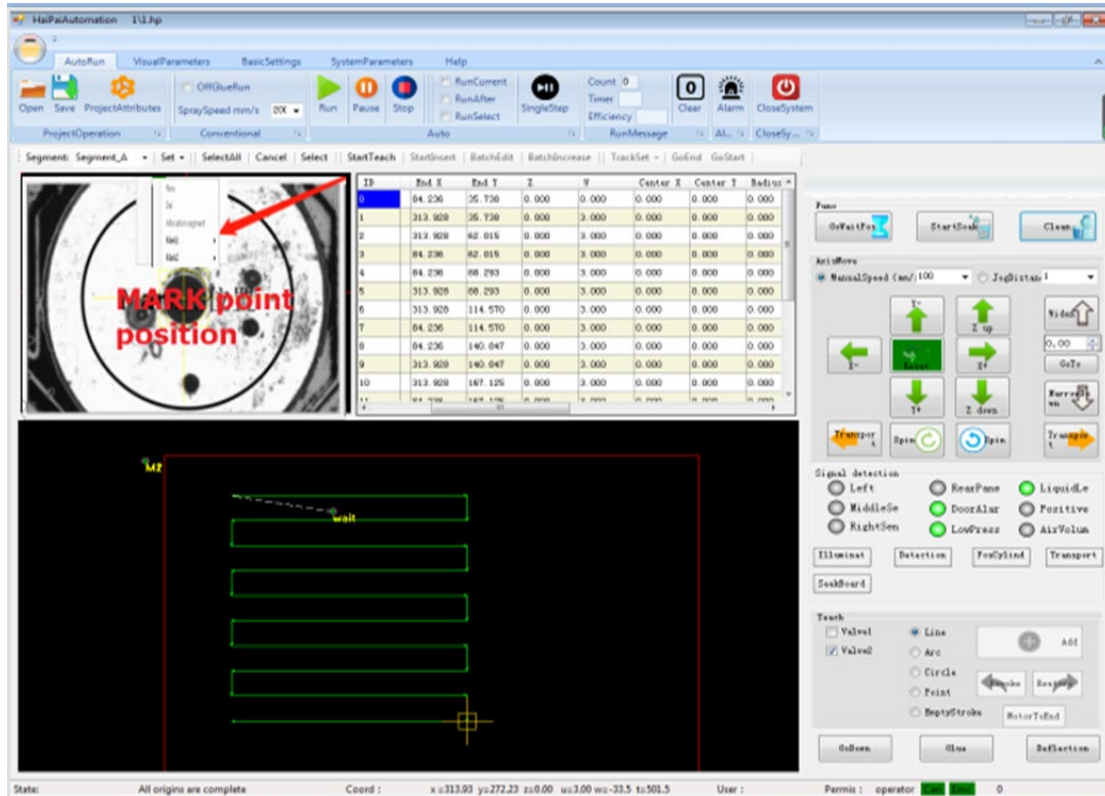


Figure 3 - 56 Mark Point 1 was created

The operator can continue to create a secondMark point by following the steps above. It looks like this.

1. Move the motion axis to where you need to set "Mark Point 2".
2. Move the Mark point cursor to where you need to set it.
3. Click on the create Mark inside the segment settings Click create Mark2 point below to create the second Mark point.
4. Once the Mark point is created, the operator can use the Test button to test the Mark point.

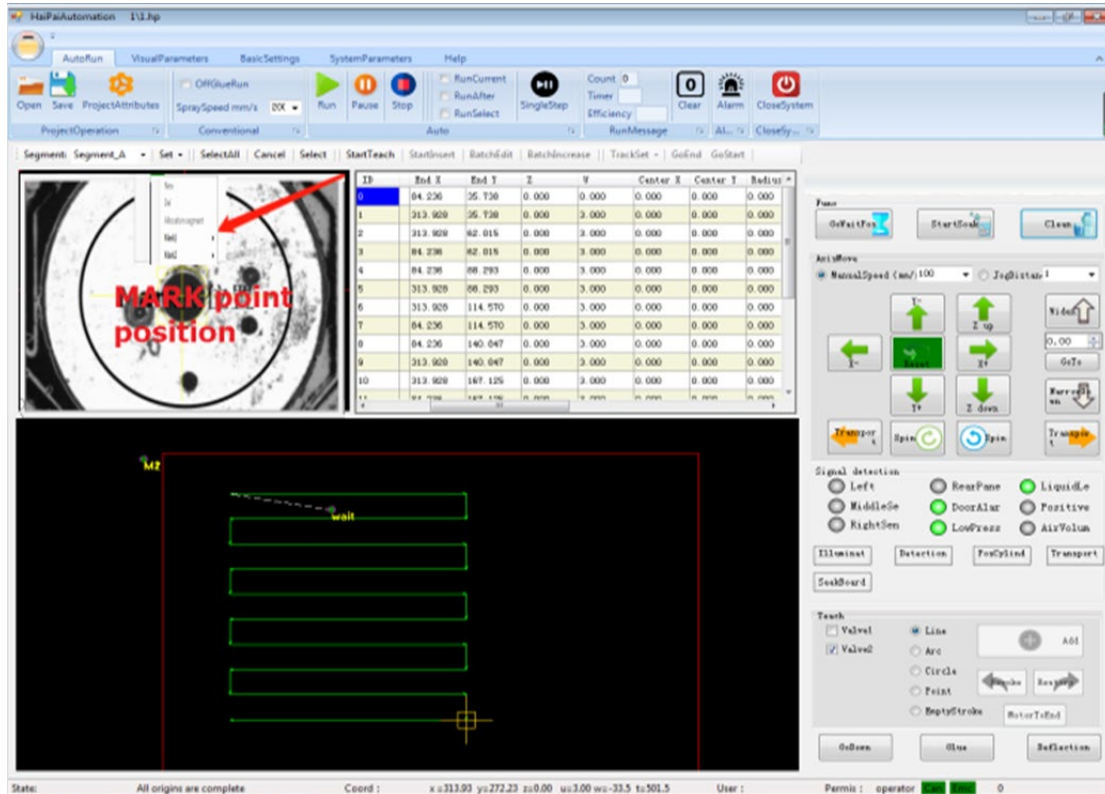


Figure 3 - 57Mark Point 2 was created

The above is the workflow for creating aMark point camera position, where the operator can track edit the product using the device after theMark point location has been created. (Note: When the user needs to use Mark point positioning at work using the device, it is important to turn on the CCD camera positioning function in the parameter settings.) Mark anchor settings can be set before editing a track or after the track has been programmed, as is the function

4. Track editing

Track editing includes the creation of tracks, track modification, track adjustment, track saving.

4.1 Total reset

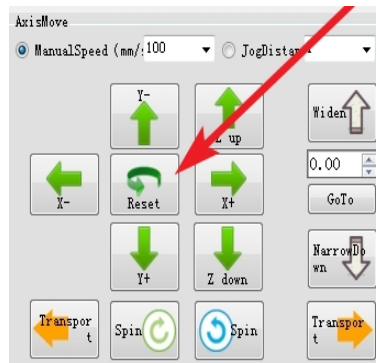


Figure 4- 1reset

After the device is powered off and powered back on, a zero-action action is "reset" action to be performed, and the reset button can be clicked on to perform this action.

4.2 Single-axis reset

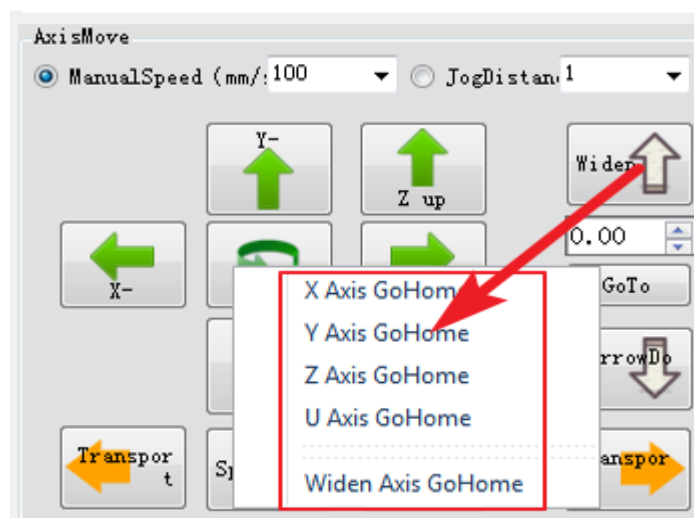


Figure 4- 2Single-axis reset

The device "reset button" can be X-axis, Y-axis, Z-axis reset, if you need to reset each axis individually can right-click "reset" button will pop up a single-axis reset button, select the motion axis that needs to reset action can be a separate reset of each axis.

4.3 Create a new file

Clicking on the software icon in the upper left corner will bring up the dialog box and click the New button as shown in Figure 4-3

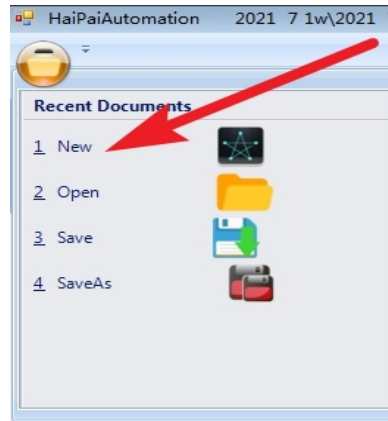


Figure 4- 3New

When you click the New button, a dialog box pops up, as shown in Figure 4-4, prompting you to enter a file name and entering the "OK" button when you're done clicking.

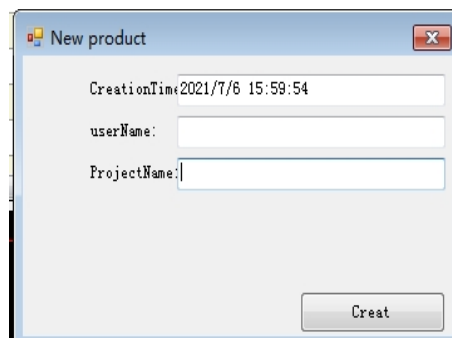


Figure 4- 4name

4.4 Start teaching

Click the teach-in button to enter the track editing state function as shown in Figure 4-8.

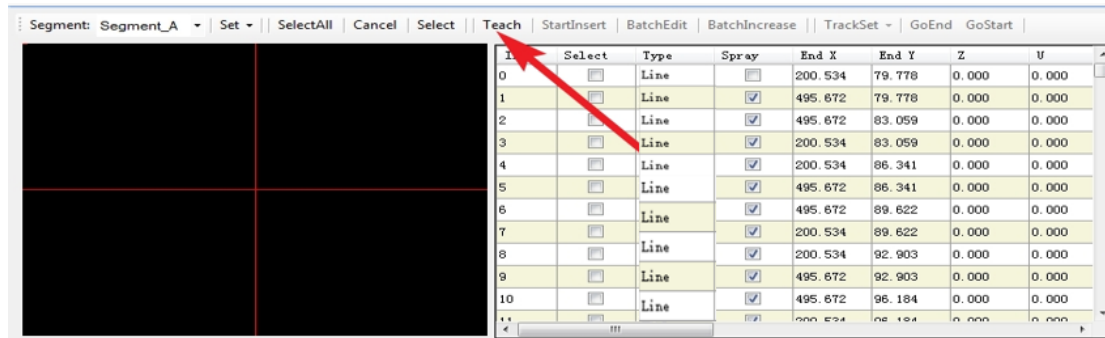


Figure 4-5 5Start teaching

4.5 Step track editing

The device enters the track editing state after clicking the "Start teach-in" button. The editing process is shown in Figure 4-9

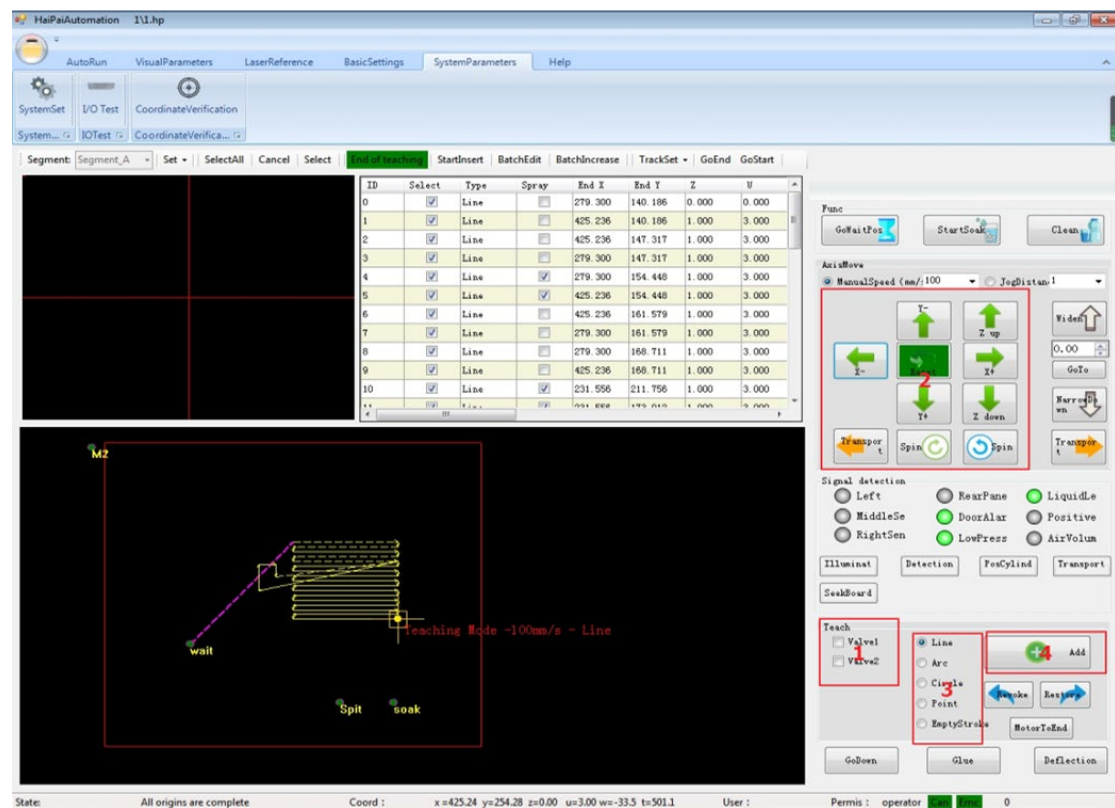


Figure 4-6 6Track Editing Process

1. Select the gun valve that is required for the current procedure.
2. Move the gun valve to the beginning of the track edit.
3. Click the Z-axis to adjust the gun valve height.

4. Select track modes such as: line, arc, round, point, empty stroke, and so on.
5. Finally join clicking on this point.

If you need to add a new run trace later, you can join the new track by following this process.

4.6 The matrix of the trajectory

In order to save programmers time when processing simultaneously for a platter or multiple boards (size, size, shape, processing area), the software adds the matrix function of running the track program, that is, in the case of a platter or multiple boards, our programmers do not need to edit each product's trajectory one by one only need to edit the complete running trajectory of a product, and then through the matrix function can obtain the running track required for multiple product spraying, the effect is as shown in Figure 4-10.

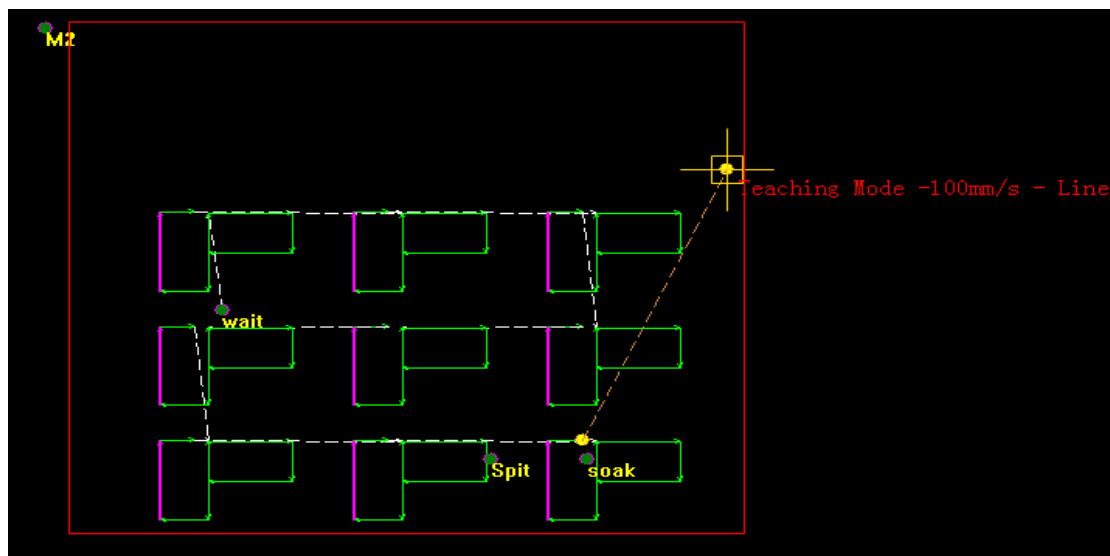


Figure 4- 7Effect

4.7 Matrix editing process

1. After editing the full track of a product, click the "Track Settings" button as shown in Figure 4-11.

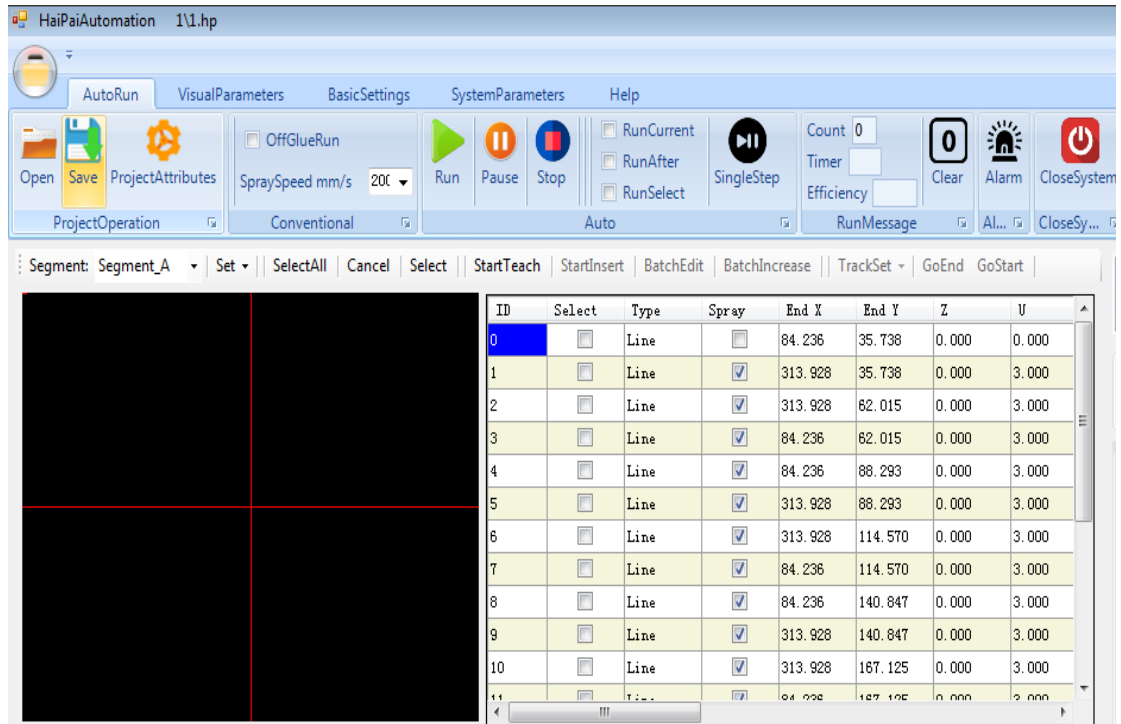


Figure 4- 8Settings

- After clicking on track settings, the track settings dialog box pops up and clicks "Offset Matrix." Figure 4-12 shows.

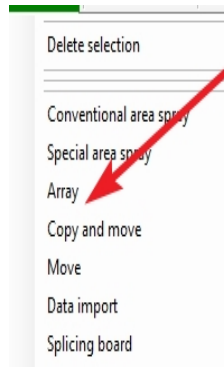


Figure 4- 9feature

- Click on the "offset matrix" after the interface as shown in Figure 4-13. Set the number of "spacing" you need to select "spray mode" and "build method". Click Preview to see the graphical status of the actual track generation. Once you're sure, click the Build button. At this point, the matrix editing track is complete and you can click to end the teaching and save the file. **Note:**(X spacing: positive to right, negative to left; Y spacing: positive backward, negative forward offset;).

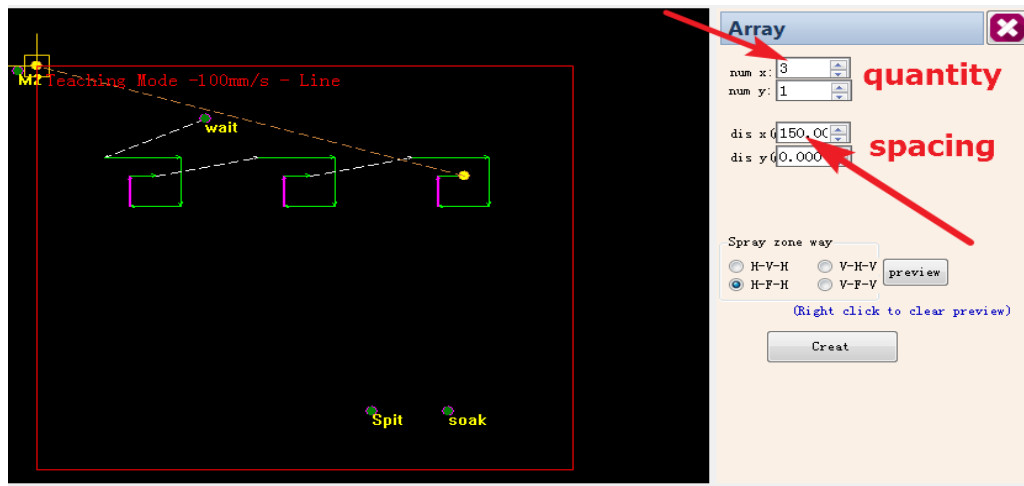


Figure 4- 10parameters

4.8 Editing of general area spraying

1. After the device "resets" action, "new file" clicks the "start teach" button device to enter the teach-in state, clicks "track settings" and clicks "general area spraying" as shown in Figure 4-14.

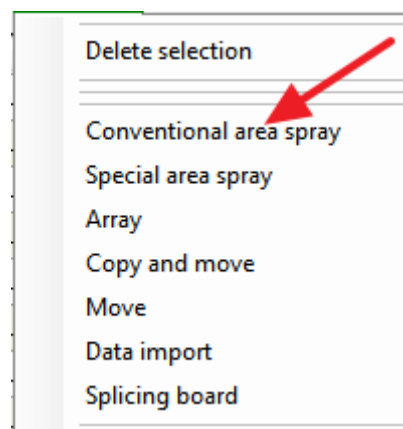


Figure 4-11 11Select the feature

2. After clicking on "General Area Spraying" the interface is shown in Figure 4-15.

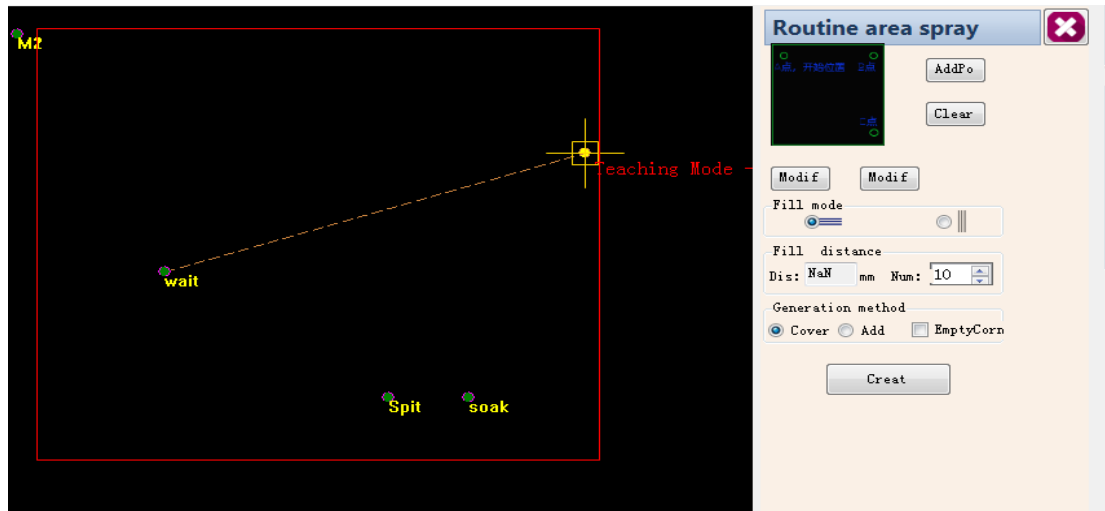


Figure 4- 12locale

3. Move the gun valve to the area where it needs to be sprayed and adjust the height of the spray valve, select the start spray position, click "Add Point", move the gun valve to another location to continue clicking "Add Point" and then move the gun valve to another location to continue clicking "Add Point". The device draws a four-deformed area spray range based on the three points set, **note:** Set "Fill Mode" and the spacing between the input quantity segments in the online segment quantity box will automatically change, **Note:**(Recommended spacing is between 4-6) and "Build Mode" after completion click the OK Build button. Figure 4-16 shows. To continue adding or modifying the spray area on this basis to repeat this process, **note:**("Build" is "overwriting" or "appending" the spray area).

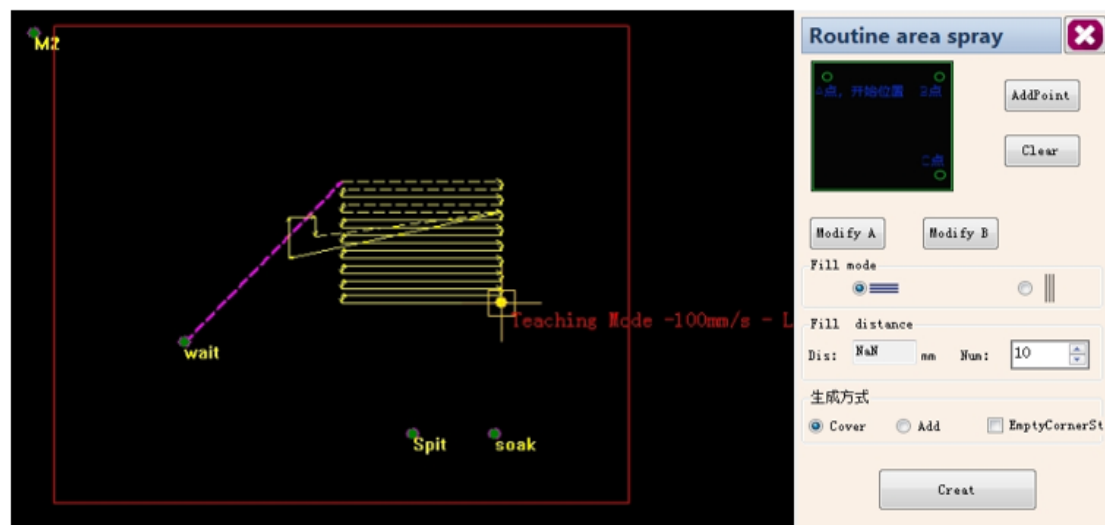


Figure 4- 13Effect

4.9 Special area editing

1. After the device "reset" action, "new file" click on the "start teaching" button device into the teach-in state, click "track settings", click "special area spray" as shown in Figure 4-14.

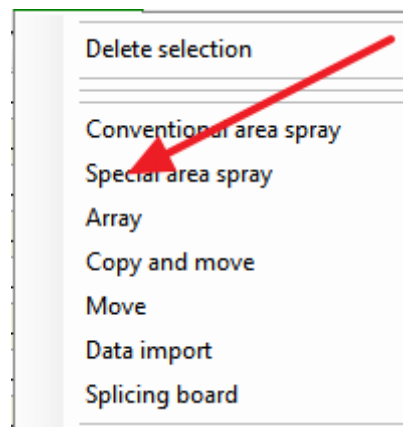


Figure 4- 14array

2. Move the gun valve to the area where it needs to be sprayed and adjust the height of the spray valve, select the start spray position, click "Add Point", move the gun valve to another location to continue clicking "Add Point" and then move the gun valve to another location to continue clicking "Add Point". The device draws a selected type of spray range based on the three points set, **Note 1**(when selecting a type of circle, fan, and quad, the device operator only needs to add three points to position the shape in the area). **Note 2**(When the type is selected as a quad, there is an extra 4 fill modes, such as Spiral Fill Mode, Return Fill Mode, Landscape Fill, and Vertical Fill, when the type is selected as a quad). **Note 3**(When the type is selected as polygon, it avoids areas that do not require spraying, making it easy for track editing equipment operators to add up to 30 points in a row when adding points.) Set up Fill Mode, the spacing between the input quantity segments in the online segment quantity box changes automatically, **Note 4**(recommended spacing is between 4-6) and "Build Mode" after completion click the "OK Build" button. Figure 4-16 shows. To continue adding or modifying the spray area on this basis to repeat this process, **Note 5**(just select "Build" or "Overwrite" spray area before generation).

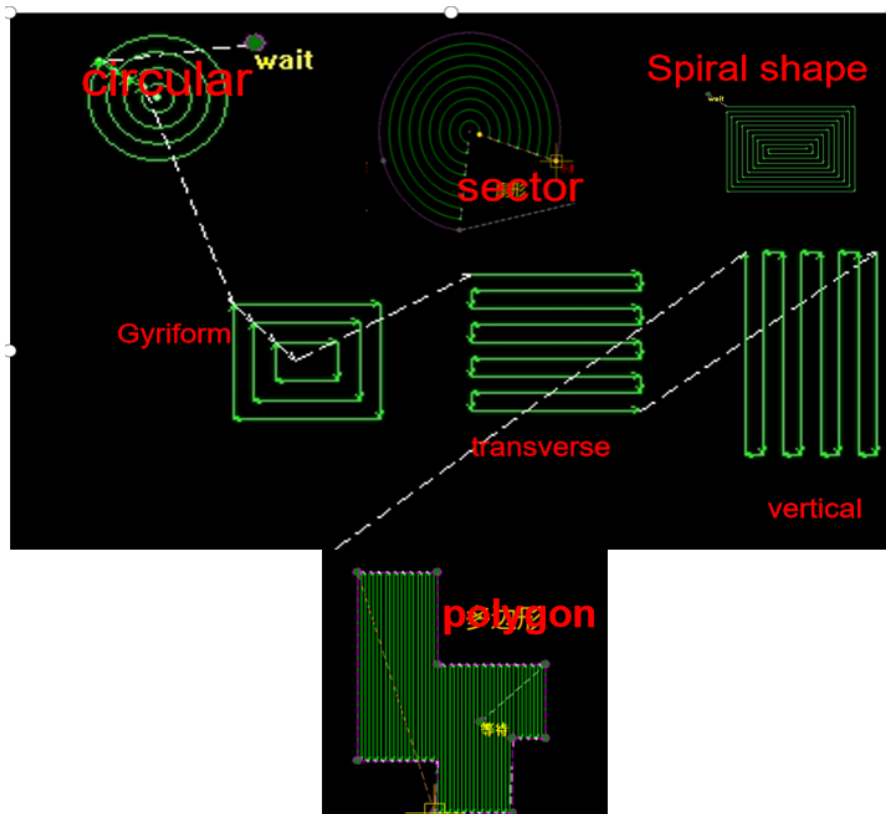


Figure 4- 15graphical display

4.10 The save of the file

In the edit completed run track, confirm that the edited running track in line with the company's process needs for products, in order to prevent the loss of the running track, to avoid unnecessary secondary editing, at this time need to edit the running track to save processing, the operation method is as follows: Figure 4-17, you can click on the software interface in the upper left corner of the software icon pop-up dialog box click "save file" or automatically run the menu bar under the "save" button to save the edited track.

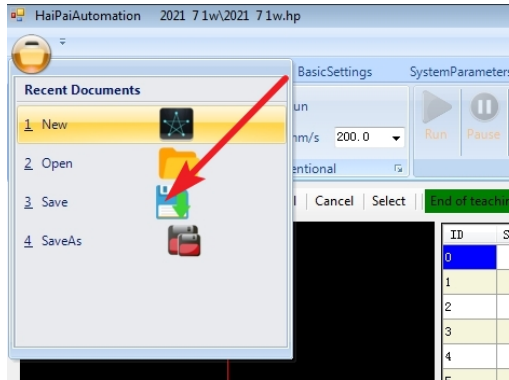


Figure 4- 16Save

5. Modification and adjustment of trajectory

After editing the running track of a product, the staff needs to make a trial run on the edited run track, in the trial run may find that the device's running track and requirements may be some deviation, at which point the staff will have edited the original running track to make a modification.

The modification and adjustment of the trajectory can be broadly divided into: step, multi-step, overall modification and adjustment.

5.1 Modification and adjustment of single and multi-track

Click the "Start teach-in" button before you can modify the run track. Select and tick the track that needs to be modified, and click on the track settings to select the type that needs to be modified. As shown in Figure 5-1.

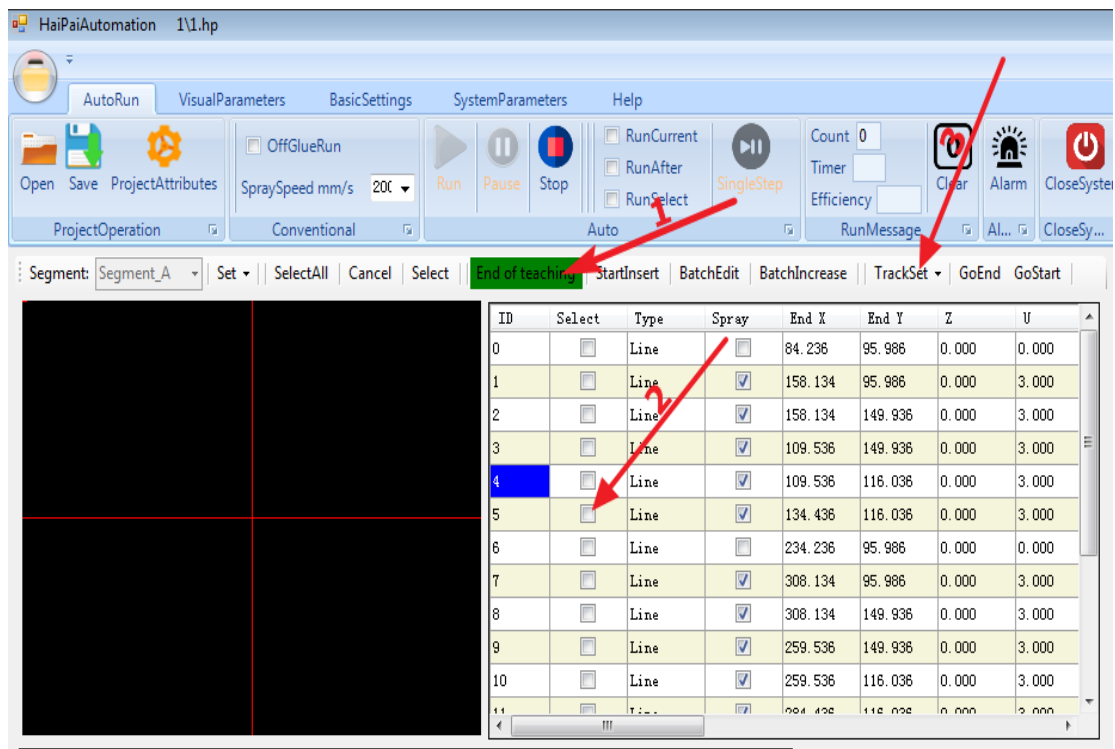


Figure 5- 1adjustment

5.2 The insertion of the track

After editing the run track, our equipment technicians tested the track and found that the trajectory we edited did not meet our actual process requirements, with fewer or no-sprays, and we needed to insert one or more run tracks to fill it where the leak and the less spray were.

Track insertion operation step: 1 click the start teach-in button, → 2 to select the need to insert the first line segment before the segment bit→3 click the positioning end button to move the device axis to the end of the segment, →4 click the start insertion option, the next insertion step and edit a single track when the operation is consistent

ID	Select	Type	Spray	End X	End Y	Z	U
0	☐	Line	☐	84.236	95.986	0.000	0.000
1	☐	Line	☒	158.134	95.986	0.000	3.000
2	☐	Line	☒	158.134	149.936	0.000	3.000
3	☐	Line	☒	109.536	149.936	0.000	3.000
4	☒	Line	☒	109.536	116.036	0.000	3.000
5	☐	Line	☒	134.436	116.036	0.000	3.000
6	☐	Line	☐	234.236	95.986	0.000	0.000
7	☐	Line	☒	308.134	95.986	0.000	3.000
8	☐	Line	☒	308.134	149.936	0.000	3.000
9	☐	Line	☒	259.536	149.936	0.000	3.000
10	☐	Line	☒	259.536	116.036	0.000	3.000
11	☐	Line	☒	284.436	116.036	0.000	3.000

State: All origins are complete Coord : x=18.74 y=-6.91 z=0.00 u=3.00 w=-33.5 t=501.5 User :

5.3 Track position movement adjustment

In the Start Teach button. Select and tick the track that needs to be modified, click on "track settings" and click on "select move" as shown in Figure 5-2.

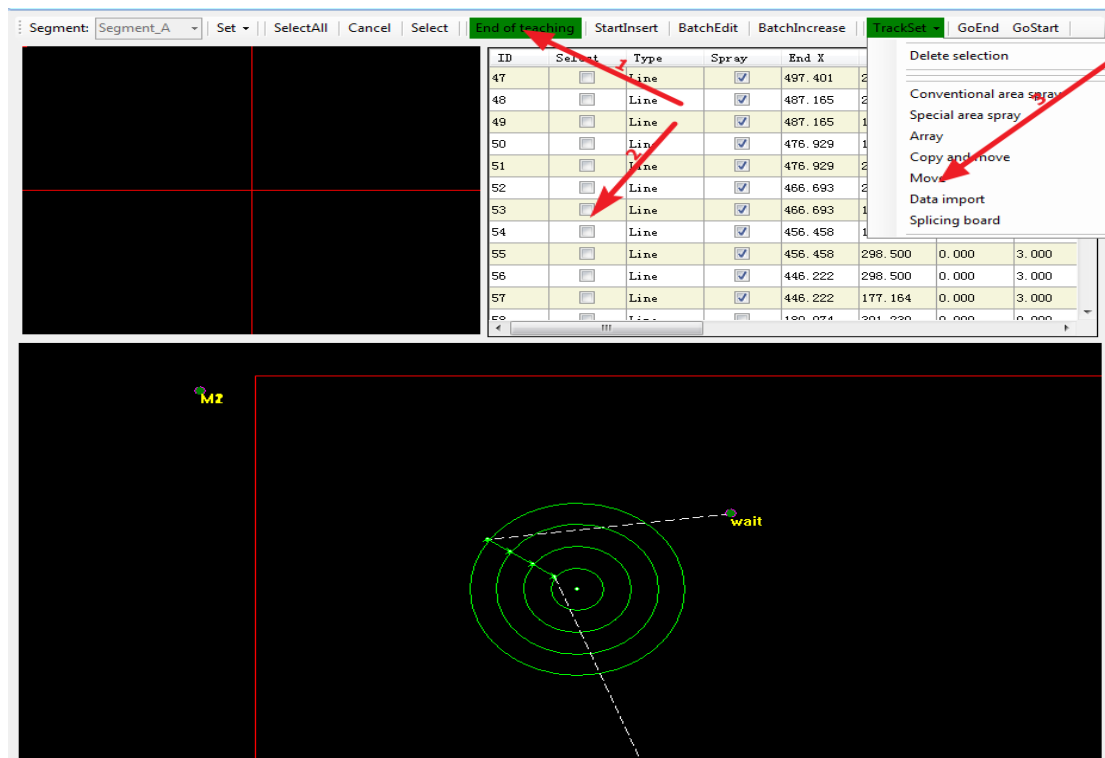


Figure 5- 2Movement

After clicking on the "Mobile Selection" function, the interface is shown in Figure 5-3. Click on the direction key of Figure 5-3 interface to achieve the front and rear left and right movement of the selected track, each click to move the distance can be "move distance" input box to enter their own moving distance. **Note** (Check "Line First and End Follow" after the movement of the segment and the front and rear segments connected to fill with empty stroke, check "Z-axis height modification" after moving, before and after modifying this segment before and after the connection height of the segment will also use empty stroke instead).

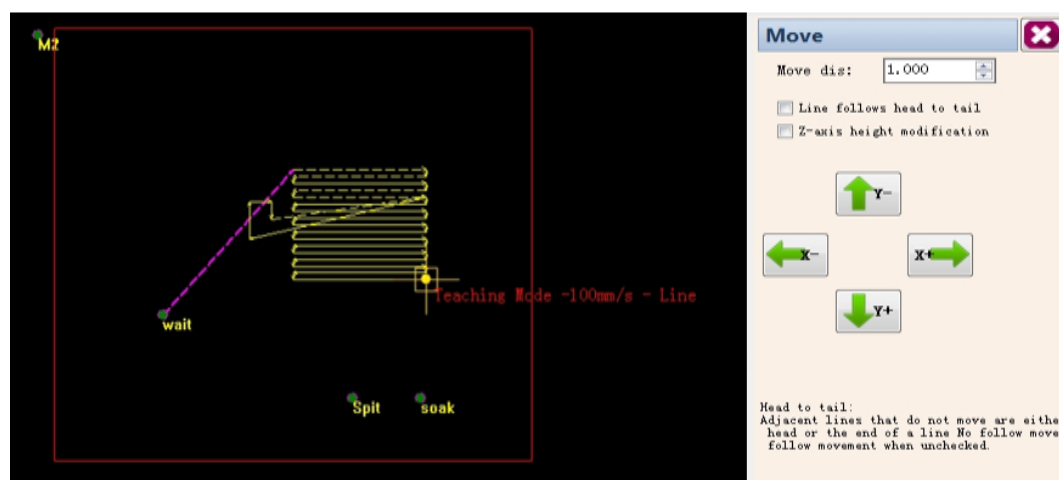


Figure 5- 3track

5.4 Track operating status modification

The worker may have set the path that needs to be sprayed to empty or other track types due to a track setup error, but by this time the edited track is almost complete and the latter has been completed. In order to avoid excessive waste of programmers' working hours and affect the production of products, the system adds the function of modifying the track state directly in the interface.

At this point, as long as our staff only need to check in the track information bar spray below the small box to make the empty line into a working state.

End of teaching StartInsert BatchEdit BatchIncrease TrackSet ▾ GoEnd GoStart							
ID	Select	Type	Spray	End X	End Y	Z	U
0	☐	Line	☐	34.236	95.986	0.000	0.000
1	☐	Line	☒	158.134	95.986	0.000	3.000
2	☐	Line	☒	158.134	149.936	0.000	3.000
3	☐	Line	☒	109.536	149.936	0.000	3.000
4	☐	Line	☒	109.536	116.036	0.000	3.000
5	☐	Line	☒	134.436	116.036	0.000	3.000
6	☐	Line	☐	234.236	95.986	0.000	0.000
7	☐	Line	☒	308.134	95.986	0.000	3.000
8	☐	Line	☒	308.134	149.936	0.000	3.000
9	☐	Line	☒	259.536	149.936	0.000	3.000
10	☐	Line	☒	259.536	116.036	0.000	3.000
11	☐	Line	☒	284.436	116.036	0.000	3.000

Figure 5- 4Modification

5.5 The overall movement and modification of the trajectory position

After the program track editing is completed, I feel that the program track and the actual requirements of the spray effect before and after the overall position of a certain distance, at this time, we need our staff to edit the completed running track to

make a whole position adjustment.

Click "Start teaching" and then tap "Track Settings" to select the "Choose copy or move" feature below the track settings as shown in Figure 5-5.

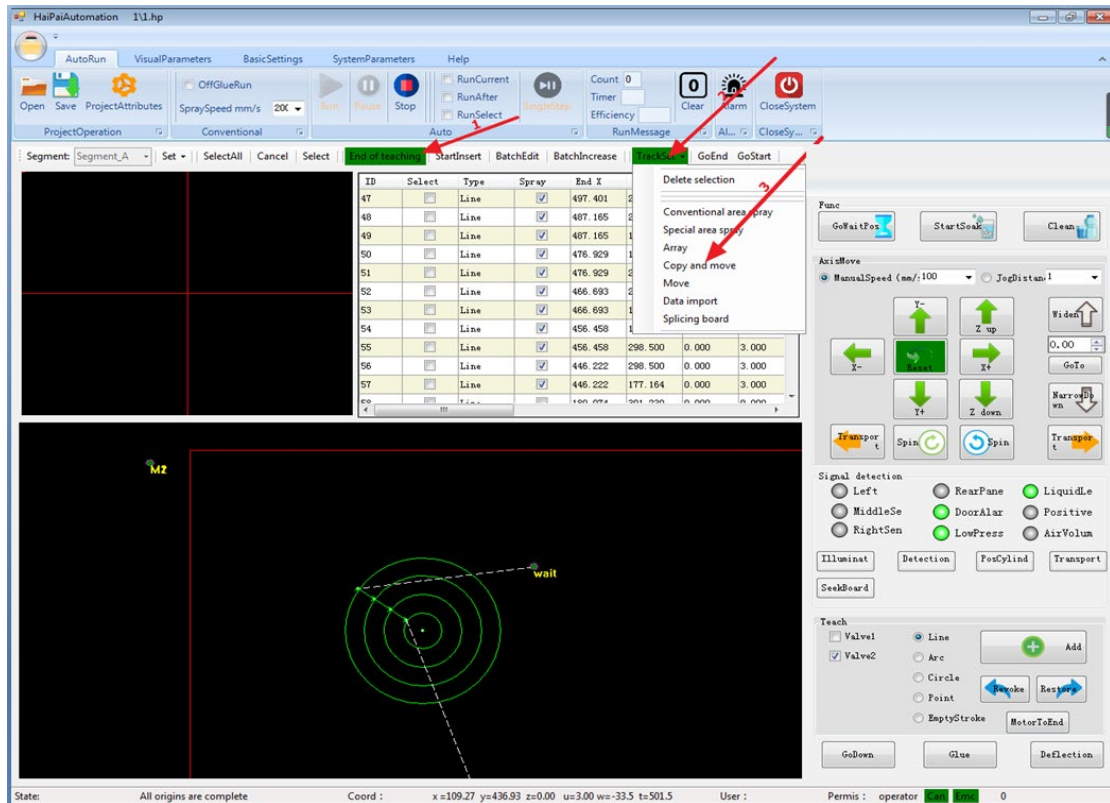


Figure 5- 5Move

After selecting the function, the interface is displayed as shown in Figure 5-6. At this point, the operator needs to manually debug the energy area to click on the axis direction button, move the axis to the appropriate position click, according to the need to click on the "confirm move" button or "confirm copy" button, you can complete the overall modification of the program trajectory. **Note:**(The Confirm Move button moves the original track to its current position, and the Confirm Copy button copies the original track to its current position and retains both tracks).

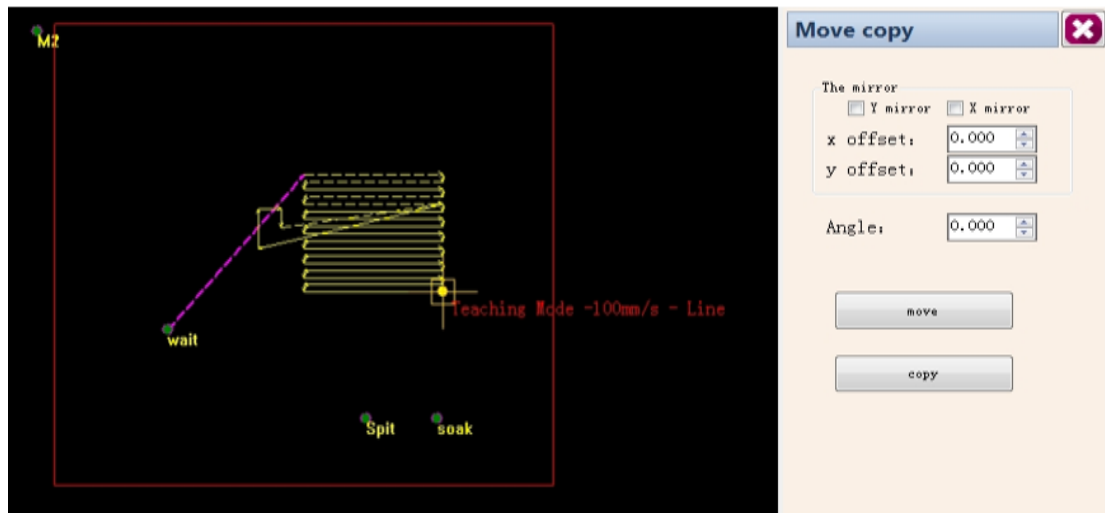


Figure 5- 6selection

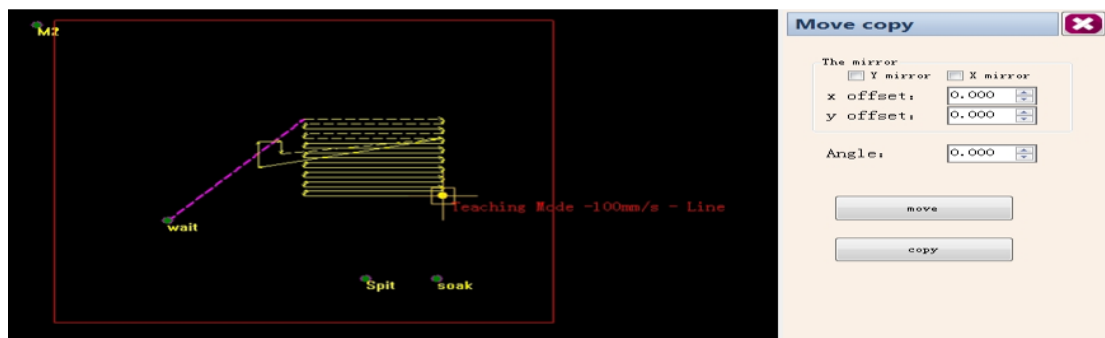


Figure 5-7 7Copy the effect map

In this function, the operator can also perform a mirror image of the X-axis, a mirror of the Y-axis, and an image angle offset of the device as shown in the following image.

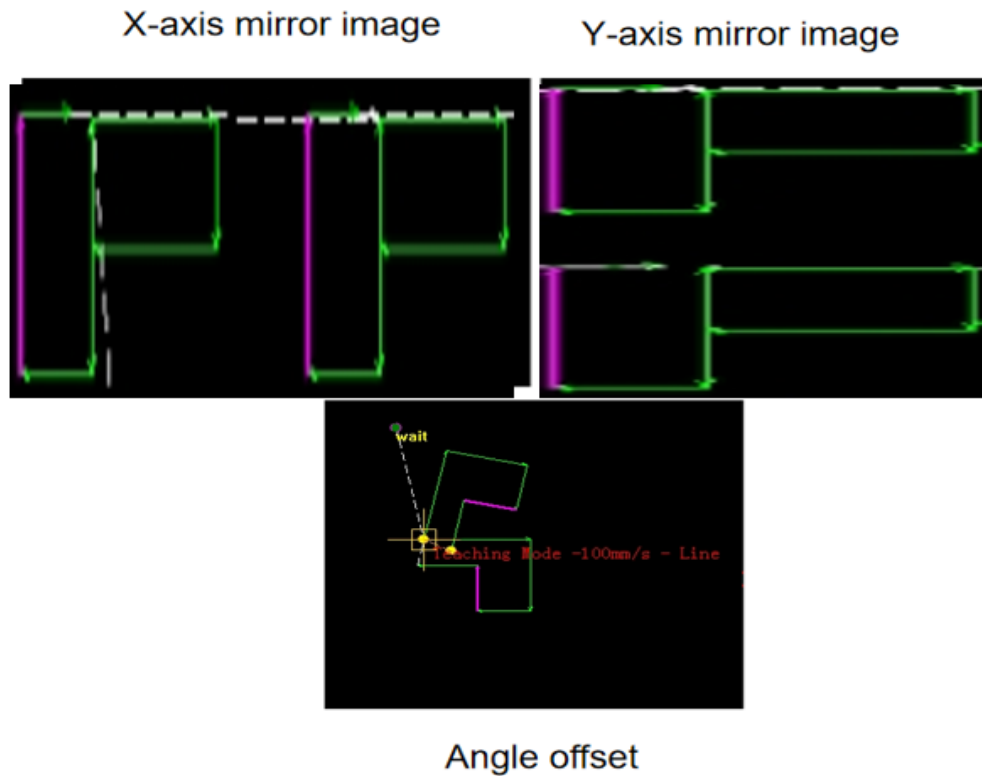


Figure 5- 8images are displayed

5.6 Data import

Sometimes when we need to process a product, we come across a product that is very similar to the one we edited earlier, but with a slight difference, or some of the products we've edited before, where we can use data import to reduce the time it takes us to edit.

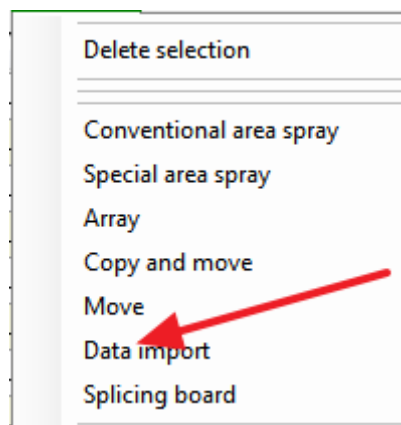


Figure 5-9 9Select the import feature

When the data import function is turned on, the device interface is shown below, and the selection file is clicked within the interface

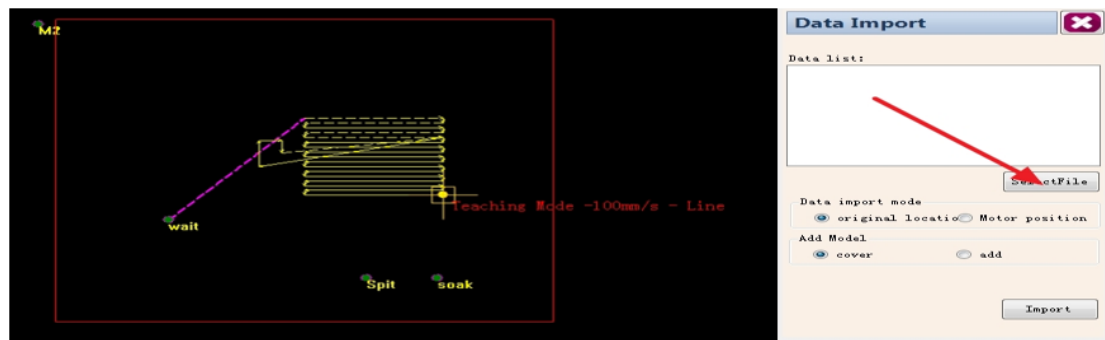


Figure 5- 10file

Click Select File to find previously edited files on your device's computer and open them

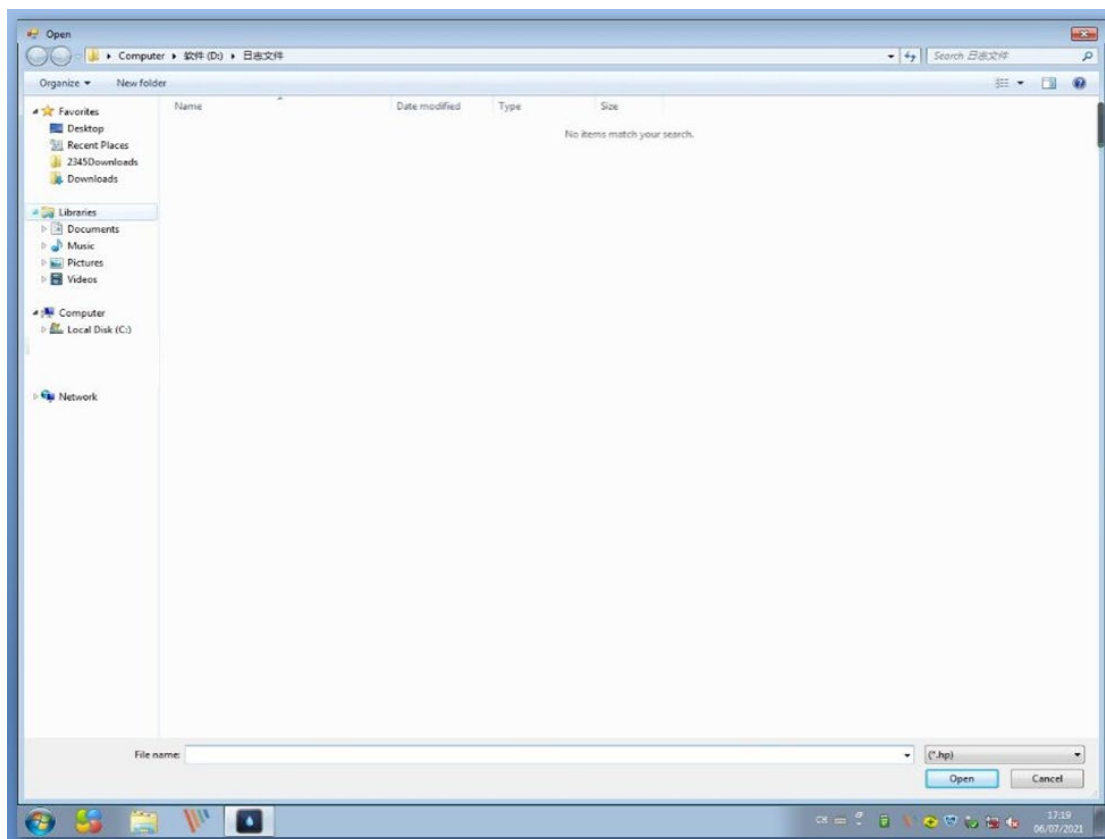


Figure 5-11 11Select and open the file

When you choose to open the file, the original image of the file is rendered to the image display area as shown in the following image. Select the data import mode,

determine the original location and the current location consistent when selecting the original location mode, when not sure the original location is consistent with the current position can choose to click position to follow, choose to click the location to follow the operator can manually debug the ribbon axis arrow keys to move the import file to the appropriate location out.

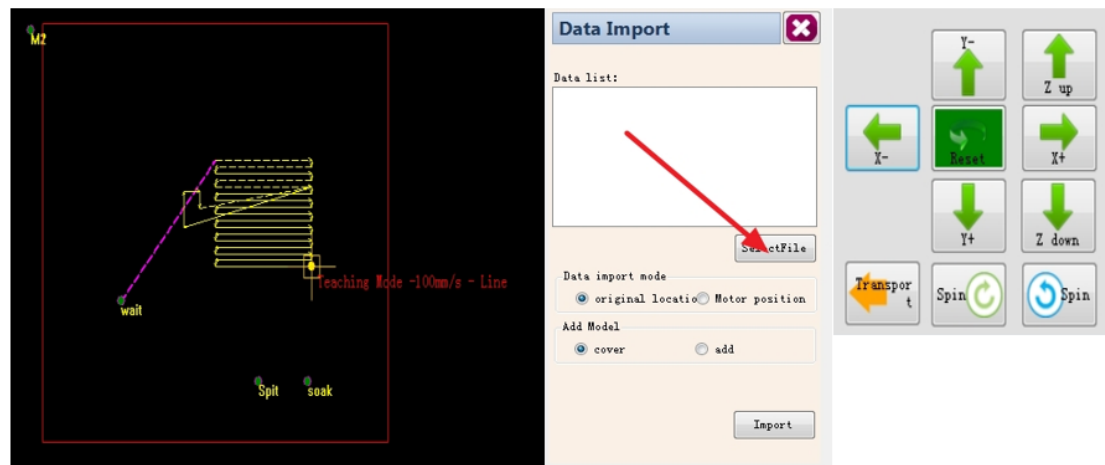


Figure 5- 12Effects

After confirming that the existing track has moved to the appropriate location, select Add Mode and click Import Data to complete the import of the data.

5.7 Platter

The flattening pattern and the pattern of the array are also the same is to stitch a running track into multiple track tracks, a single array out of the track is the same distance between each track and the trajectory, we encounter the running track needs to be consistent but the spacing between the product and the product is not consistent, the array method can not meet our product processing needs. At this point we can use the platter function to edit the product processing trajectory.

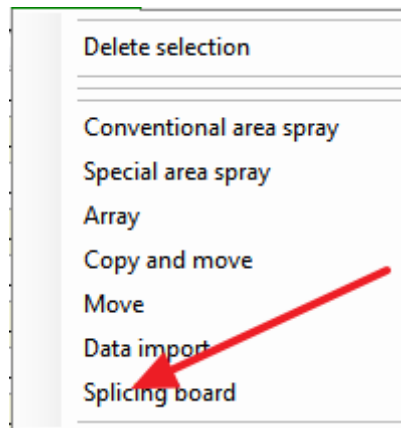


Figure 5-13 13the platter function

Click on the board function to appear the interface, we line set the number of columns, row number, column spacing, line spacing X base offset,Y base offset after clicking "Add" to stitch together the same number of set tracks. Note: (Base Offset: Add an original track to the parameter distance position set for the original track.))

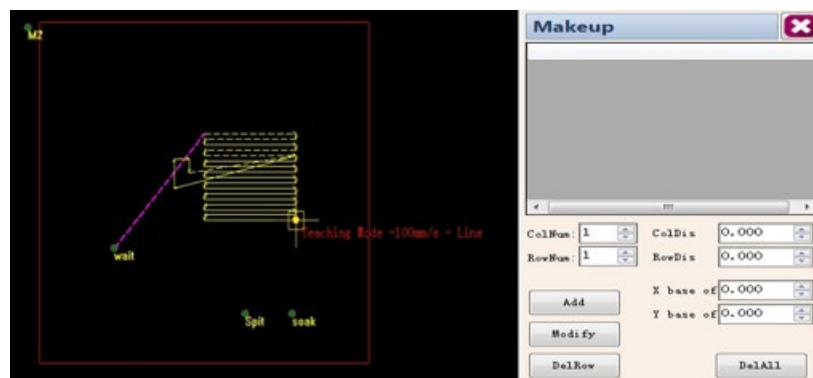


Figure 5- 14Platter features

Click the Add button to produce the image as shown in the following image.

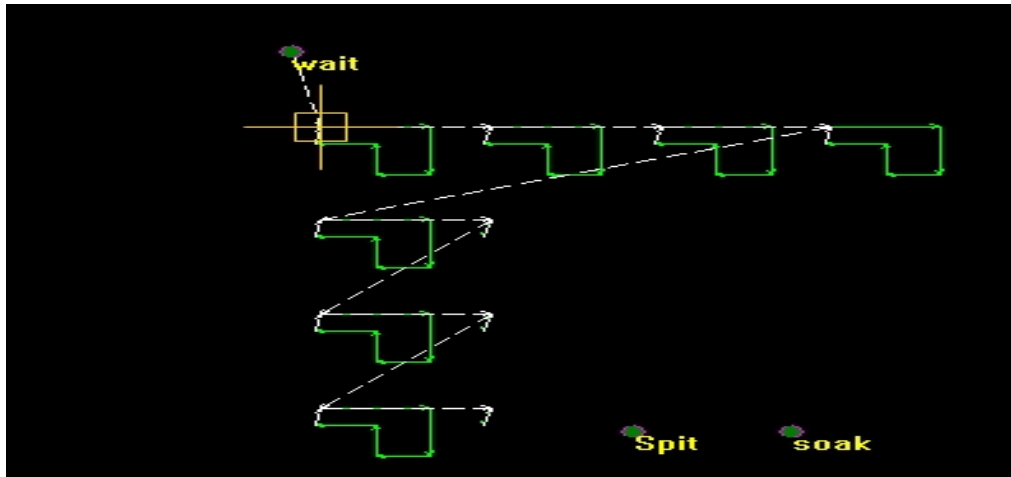


Figure 5- 15platter effect is shown

5.8 Bulk modifications

The "bulk modification" function of this coating system is similar to the replacement function in the office software. If the axis position coordinates are the same, you can use the bulk modification function if you need to make changes to the same position coordinates.

Bulk modification process: Click the "Start teaching" button - select the location coordinate information that needs to be modified - click the "Bulk modify" button - enter the location coordinate information in the dialog box.

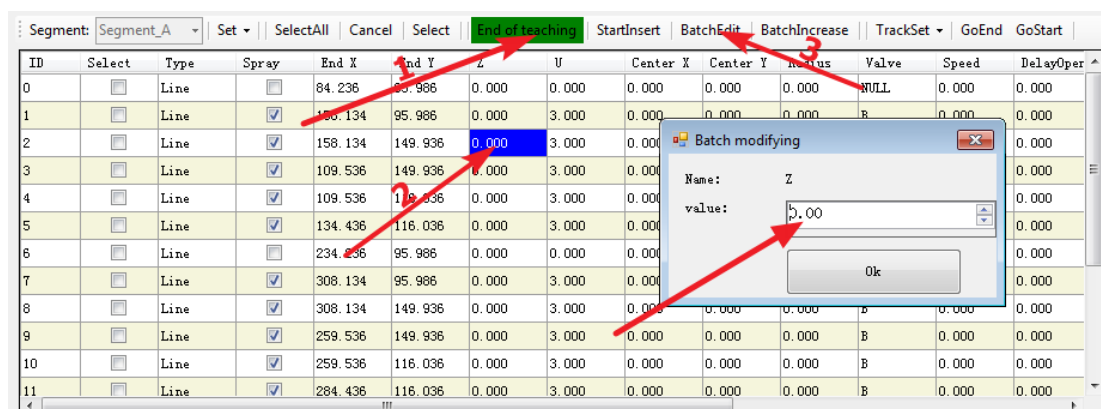


Figure 5- 16modifications

5.9 Volume increase or decrease

Sometimes the program's running trajectory needs to do a whole stretch or compression or one is the overall elevation or drop of the Z axis height, so to choose the bulk modification function to operate it is cumbersome and complex, at this time the use of bulk addition and decrease function is relatively simple.

Bulk increase and decrease operation process: click the "Start teaching" button - select the track information that needs to be modified - click on the "bulk increase and decrease" button - enter the modification data.

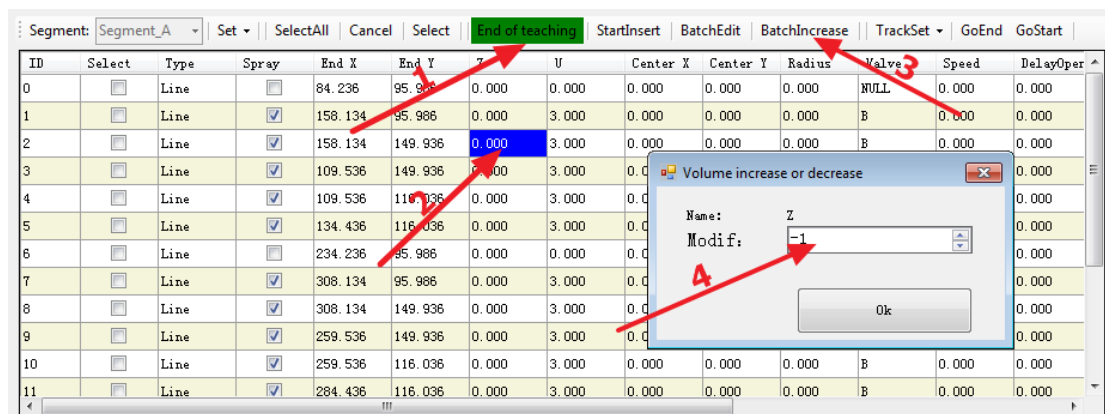


Figure 5- 17Decrease

After the track modification is complete, our staff needs to save the track file to avoid the loss of the existing track file when the device restarts or swaps other tracks.

6. The track information bar modifies the track

In the track information bar, you can modify the segment type, segment coordinates, select the gun valve, whether to atomize the glue, track speed, open glue delay, advance opening glue, rotation angle, gun valve deflection, gun valve lift. As shown in Figure 6-1.

Segment: Segment_A Set SelectAll Cancel Select End of teaching StartInsert BatchEdit BatchIncrease TrackSet GoEnd GoStart													
ID	Select	Type	Spray	End X	End Y	Z	U	Center X	Center Y	Radius	Valve	Speed	DelayOper
0	☐	Line	☐	84.236	95.986	0.000	0.000	0.000	0.000	0.000	NULL	0.000	0.000
1	☐	Line	☒	158.134	95.986	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
2	☐	Line	☒	158.134	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
3	☐	Line	☒	109.536	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
4	☐	Line	☒	109.536	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
5	☐	Line	☒	134.436	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
6	☐	Line	☐	234.236	95.986	0.000	0.000	0.000	0.000	0.000	NULL	0.000	0.000
7	☐	Line	☒	308.134	95.986	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
8	☐	Line	☒	308.134	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
9	☐	Line	☒	259.536	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
10	☐	Line	☒	259.536	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
11	☐	Line	☒	284.436	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000

ID	U	Center X	Center Y	Radius	Valve	Speed	DelayOper	Reflec	UpDown	Z AxisSym	DelayOffOn	OffOnDelay	RetractRet
0	0.000	0.000	0.000	0.000	NULL	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
1	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	NULL	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
7	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000
11	0.000	0.000	0.000	0.000	B	0.000	0.000	☐	☐	☐	0.000	0.000	0.000

Figure 6- 1Bar

6.1 Modify the segment's working status

After clicking the "Start teaching" button. To modify the working status of a segment, you can use the mouse to click on the small box under "Spray" in the track information bar to tick it to change the empty stroke track to a working state track, and vice versa, remove the check in the box to turn the track of the working state into an empty travel track.

Segment: Segment_A Set SelectAll Cancel Select End of teaching StartInsert BatchEdit BatchIncrease TrackSet GoEnd GoStart													
ID	Select	Type	Spray	End X	End Y	Z	U	Center X	Center Y	Radius	Valve	Speed	DelayOper
0	☐	Line	☐	84.236	95.986	0.000	0.000	0.000	0.000	0.000	NULL	0.000	0.000
1	☐	Line	☒	158.134	95.986	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
2	☒	Line	☒	158.134	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
3	☐	Line	☒	109.536	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
4	☐	Line	☒	109.536	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
5	☐	Line	☒	134.436	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
6	☐	Line	☐	234.236	95.986	0.000	0.000	0.000	0.000	0.000	NULL	0.000	0.000
7	☐	Line	☒	308.134	95.986	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
8	☐	Line	☒	308.134	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
9	☐	Line	☒	259.536	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
10	☐	Line	☒	259.536	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000
11	☐	Line	☒	284.436	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000

Figure 6-2 2Modifies the segment type

6.2 Modify segment coordinates

After clicking the "Start teaching" button. To modify the coordinate position of the segment, after clicking the mouse cursor into the corresponding coordinate value, manually enter the corresponding coordinate value to change the current value when the color of the numeric box changes. As shown in Figure 6-3.

Segment: Segment_A Set SelectAll Cancel Select End of teaching Startinsert BatchEdit BatchIncrease TrackSet GoEnd GoStart														
ID	Select	Type	Spray	End X	End Y	Z	U	Center X	Center Y	Radius	Valve	Speed	DelayOper	
0	☐	Line	☐	84.236	95.986	0.000	0.000	0.000	0.000	0.000	NULL	0.000	0.000	
1	☐	Line	☒	158.134	95.986	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	
2	☒	Line	☒	158.134	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	
3	☐	Line	☒	109.536	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	
4	☐	Line	☒	109.536	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	
5	☐	Line	☒	134.436	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	
6	☐	Line	☐	234.236	95.986	0.000	0.000	0.000	0.000	0.000	NULL	0.000	0.000	
7	☐	Line	☒	308.134	95.986	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	
8	☐	Line	☒	308.134	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	
9	☐	Line	☒	259.536	149.936	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	
10	☐	Line	☒	259.536	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	
11	☐	Line	☒	284.436	116.036	0.000	3.000	0.000	0.000	0.000	B	0.000	0.000	

Figure 6- 3coordinates

6.3 Gun valve selection

After clicking the "Start teaching" button. If you need to replace the gun valve or do not use the gun valve, click on the corresponding track segment below the gun valve in the track information bar to switch letters. As shown in Figures 6-4.

Note:(NULL means not to use the gun valve, A means to use the gun valve 1, B means to use the gun valve 2,C means to use the gun valve 3, D means to use the gun valve 4, AB means to use the gun valve 1 and gun valve 2,ABC indicates the use of the gun valve 1, 2, 3, 4). Figures 6- 5

End of teaching StartInsert BatchEdit BatchIncrease TrackSet ▾ GoEnd GoStart								
ID		Center X	Center Y	Radius	Valve	Speed	DelayOpenC	I
0	00	0.000	0.000	0.000	NULL	0.000	0.000	
1	00	0.000	0.000	0.000	NULL	0.000	0.000	
2	00	0.000	0.000	0.000	NULL	0.000	0.000	
3	00	0.000	0.000	0.000	A	0.000	0.000	
4	00	0.000	0.000	0.000	B	0.000	0.000	
5	00	0.000	0.000	0.000	C	0.000	0.000	
6	00	0.000	0.000	0.000	D	0.000	0.000	
7	00	0.000	0.000	0.000	AB	0.000	0.000	
8	00	0.000	0.000	0.000	AC	0.000	0.000	
9	00	0.000	0.000	0.000	AD	0.000	0.000	
10	00	0.000	0.000	0.000	BC	0.000	0.000	
11	00	0.000	0.000	0.000	BD	0.000	0.000	
12	00	0.000	0.000	0.000	CD	0.000	0.000	
13	00	0.000	0.000	0.000	ABC	0.000	0.000	
14	00	0.000	0.000	0.000	ABD	0.000	0.000	
15	00	0.000	0.000	0.000	ACD	0.000	0.000	
16	00	0.000	0.000	0.000	BCD	0.000	0.000	
17	00	0.000	0.000	0.000	ABCD	0.000	0.000	
18	00	0.000	0.000	0.000	NULL	0.000	0.000	

Figure 6- 4 Gun valve selection

Valve 1	Valve 2	Valve 3	Valve 4
A	B	C	D
AB		CD	
	BC		
ABCD			

Figure 6-5 4The corresponding value of the gun valve

6.4 Atomize the glue selection

After the device atomization dispensing is controlled separately, the device can be selected whether or not to atomize the device. When you click the "Start teaching" button, the operation method is the same as the gun valve selection.

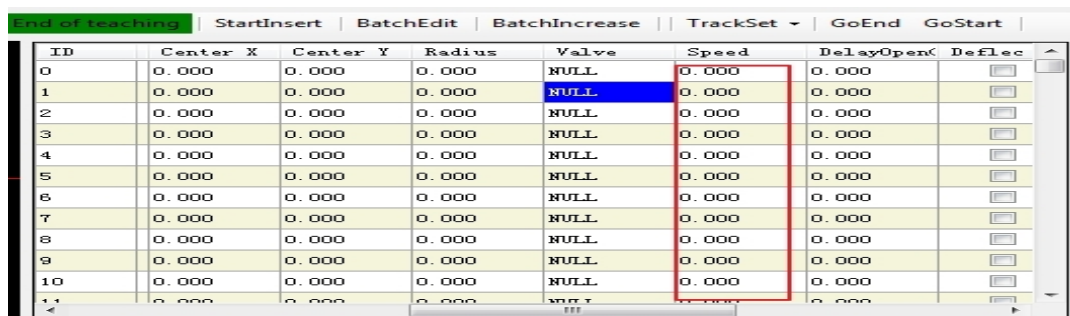
Segment: Segment_A ▾ Set ▾ SelectAll Cancel Select End of teaching StartInsert BatchEdit BatchIncrease TrackSet ▾ GoEnd GoStart													
ID	Select	Type	Spray	End X	End Y	U	Center X	Center Y	Radius	Valve	Speed	DelayOper	
0	☐	Line	☐	84.236	95.986	0.000	0.000	0.000	0.000	NULL	0.000	0.000	
1	☐	Line	☒	158.134	95.986	0.000	3.000	0.000	0.000	B	0.000	0.000	
2	☒	Line	☒	158.134	149.936	0.000	3.000	0.000	0.000	B	0.000	0.000	
3	☐	Line	☒	109.536	149.936	0.000	3.000	0.000	0.000	B	0.000	0.000	
4	☐	Line	☒	109.536	116.036	0.000	3.000	0.000	0.000	B	0.000	0.000	
5	☐	Line	☒	134.436	116.036	0.000	3.000	0.000	0.000	B	0.000	0.000	
6	☐	Line	☐	234.236	95.986	0.000	0.000	0.000	0.000	NULL	0.000	0.000	
7	☐	Line	☒	308.134	95.986	0.000	3.000	0.000	0.000	B	0.000	0.000	
8	☐	Line	☒	308.134	149.936	0.000	3.000	0.000	0.000	B	0.000	0.000	
9	☐	Line	☒	259.536	149.936	0.000	3.000	0.000	0.000	B	0.000	0.000	
10	☐	Line	☒	259.536	116.036	0.000	3.000	0.000	0.000	B	0.000	0.000	
11	☐	Line	☒	284.436	116.036	0.000	3.000	0.000	0.000	B	0.000	0.000	

Figure 6- 5Atomizes the glue

6.5 Modify the track run speed

When you click the "Start teaching" button, you can change the value of the

track segment by clicking the corresponding track segment value below the speed in the track information bar, which is the speed at which the track is running.



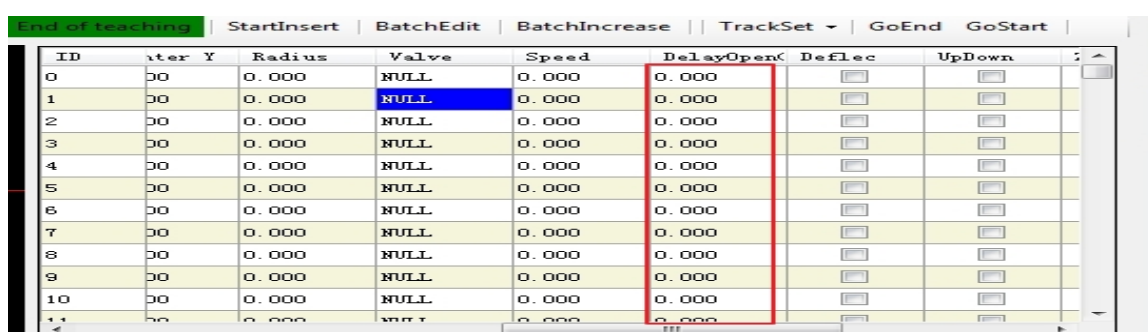
ID	Center X	Center Y	Radius	Valve	Speed	DelayOpenC	Deflec
0	0.000	0.000	0.000	NULL	0.000	0.000	
1	0.000	0.000	0.000	NULL	0.000	0.000	
2	0.000	0.000	0.000	NULL	0.000	0.000	
3	0.000	0.000	0.000	NULL	0.000	0.000	
4	0.000	0.000	0.000	NULL	0.000	0.000	
5	0.000	0.000	0.000	NULL	0.000	0.000	
6	0.000	0.000	0.000	NULL	0.000	0.000	
7	0.000	0.000	0.000	NULL	0.000	0.000	
8	0.000	0.000	0.000	NULL	0.000	0.000	
9	0.000	0.000	0.000	NULL	0.000	0.000	
10	0.000	0.000	0.000	NULL	0.000	0.000	
11	0.000	0.000	0.000	NULL	0.000	0.000	

Figure 6- 6Tracks run at speed

6.6 Adjust the delayed opening time

Delayed opening: The gun valve and the mechanical moving shaft wait for a period of time after reaching the specified position for the operation of the equipment before starting to make the glue action.

After clicking the "Start teaching" button, click on the corresponding track segment under "time-lapse opening glue" in the track information bar, and enter a certain number in the box to change the time of the corresponding segment. (Positive is delayed opening glue, negative number is early dispensing) as shown in Figure 6-8.



ID	Center Y	Radius	Valve	Speed	DelayOpenC	Deflec	UpDown
0	00	0.000	NULL	0.000	0.000		
1	00	0.000	NULL	0.000	0.000		
2	00	0.000	NULL	0.000	0.000		
3	00	0.000	NULL	0.000	0.000		
4	00	0.000	NULL	0.000	0.000		
5	00	0.000	NULL	0.000	0.000		
6	00	0.000	NULL	0.000	0.000		
7	00	0.000	NULL	0.000	0.000		
8	00	0.000	NULL	0.000	0.000		
9	00	0.000	NULL	0.000	0.000		
10	00	0.000	NULL	0.000	0.000		
11	00	0.000	NULL	0.000	0.000		

Figure 6-8 7Open glue delay

6.7 Delay the closing of the glue

Delayed off glue: For the device at runtime gun valve action and equipment

shaft has reached the specified position, the equipment gun valve delay for a period of time (set time) and then close the gun valve.

After clicking the "Start teaching" button, click on the corresponding track segment under "time-lapse off glue" in the track information bar, and enter a certain number in the box to change the closing time of the corresponding segment to make changes. (Positive number is delayed off glue, negative number is pre-off glue) As shown in Figure 6-9.

ID	elayOpenC	Deflec	UpDown	Z AxisSyn	DelayOffG	OffGlueDel	RetractHei
0	000	☐	☐	☐	0.000	0.000	0.000
1	000	☐	☐	☐	0.000	0.000	0.000
2	000	☐	☐	☐	0.000	0.000	0.000
3	000	☐	☐	☐	0.000	0.000	0.000
4	000	☐	☐	☐	0.000	0.000	0.000
5	000	☐	☐	☐	0.000	0.000	0.000
6	000	☐	☐	☐	0.000	0.000	0.000
7	000	☐	☐	☐	0.000	0.000	0.000
8	000	☐	☐	☐	0.000	0.000	0.000
9	000	☐	☐	☐	0.000	0.000	0.000
10	000	☐	☐	☐	0.000	0.000	0.000
11	000	☐	☐	☐	0.000	0.000	0.000

Figure 6-9 8Advance glue

6.8 The glue is turned off and delayed

Off-glue delay: For the equipment at runtime equipment shaft and gun valve has completed the corresponding action and reached the specified position, the equipment equipment before the next action of the equipment gun valve and equipment shaft stay for a period of time (set time).

After clicking the "Start teaching" button, click on the corresponding track segment under "Close glue delay" in the track information bar, and enter a certain number in the box to change the time of the corresponding segment's closing delay. (Positive is dwell time, negative number is advance time) as shown in Figures 6-10.

ID	elayOpenC	Deflec	UpDown	Z AxisSyn	DelayOffGJ	OffGlueDeJ	RetractHei
0	000	☐	☐	☐	0.000	0.000	0.000
1	000	☐	☐	☐	0.000	0.000	0.000
2	000	☐	☐	☐	0.000	0.000	0.000
3	000	☐	☐	☐	0.000	0.000	0.000
4	000	☐	☐	☐	0.000	0.000	0.000
5	000	☐	☐	☐	0.000	0.000	0.000
6	000	☐	☐	☐	0.000	0.000	0.000
7	000	☐	☐	☐	0.000	0.000	0.000
8	000	☐	☐	☐	0.000	0.000	0.000
9	000	☐	☐	☐	0.000	0.000	0.000
10	000	☐	☐	☐	0.000	0.000	0.000
11	000	☐	☐	☐	0.000	0.000	0.000

6.9 Adjust the rotation angle

Rotation angle: When the device is equipped with a rotating axis (U-axis), a numerical display shows the size of the changed value below the rotation angle in the track information bar to get the corresponding U-axis rotation angle.

After clicking the "Start teaching" button, click the corresponding track segment rotation value below "U-axis angle" in the track information bar to change the size of the corresponding segment rotation angle to adjust. As shown in Figure6-1 1.

ID		End Y	Z	U	Center X	Center Y	Radius	Val
0	4	79.778	0.000	0.000	0.000	0.000	0.000	NULL
1	2	79.778	0.000	0.000	0.000	0.000	0.000	NULL
2	2	83.059	0.000	0.000	0.000	0.000	0.000	NULL
3	4	83.059	0.000	0.000	0.000	0.000	0.000	NULL
4	4	86.341	0.000	0.000	0.000	0.000	0.000	NULL
5	2	86.341	0.000	0.000	0.000	0.000	0.000	NULL
6	2	89.622	0.000	0.000	0.000	0.000	0.000	NULL
7	4	89.622	0.000	0.000	0.000	0.000	0.000	NULL
8	4	92.903	0.000	0.000	0.000	0.000	0.000	NULL
9	2	92.903	0.000	0.000	0.000	0.000	0.000	NULL
10	2	96.184	0.000	0.000	0.000	0.000	0.000	NULL
11	4	96.184	0.000	0.000	0.000	0.000	0.000	NULL

Figure 6-11 Rotation angle

6.10 Modify the valve deflection

Gun valve deflection: The equipment deflection cylinder can be modified if the valve is deflected at work, provided that the device is equipped with a deflection cylinder. **Note:**(Check as deflection, not as vertical).

ID	StartTeach	DelayOpenK	Deflec	UpDown	Z AxisSyn	DelayOffGJ	OffGJueDel	I
0	00	0.000	☒	☐	☐	0.000	0.000	0
1	00	0.000	☐	☐	☐	0.000	0.000	0
2	00	0.000	☐	☐	☐	0.000	0.000	0
3	00	0.000	☐	☐	☐	0.000	0.000	0
4	00	0.000	☐	☐	☐	0.000	0.000	0
5	00	0.000	☐	☐	☐	0.000	0.000	0
6	00	0.000	☐	☐	☐	0.000	0.000	0
7	00	0.000	☐	☐	☐	0.000	0.000	0
8	00	0.000	☐	☐	☐	0.000	0.000	0
9	00	0.000	☐	☐	☐	0.000	0.000	0
10	00	0.000	☐	☐	☐	0.000	0.000	0
11	00	0.000	☐	☐	☐	0.000	0.000	0

Figure 6-11 9valve deflection

6.11 Gun valve lift

Modifying this item can change the drop and rise status of the gun valve while the device is running. **Note:**(the gun valve is not checked for up, check for the gun valve drop state after checking).

ID	ed	DelayOpenK	Deflec	UpDown	Z AxisSyn	DelayOffGJ	OffGJueDel	I
0	00	0.000	☐	☒	☐	0.000	0.000	0
1	00	0.000	☐	☐	☐	0.000	0.000	0
2	00	0.000	☐	☐	☐	0.000	0.000	0
3	00	0.000	☐	☐	☐	0.000	0.000	0
4	00	0.000	☐	☐	☐	0.000	0.000	0
5	00	0.000	☐	☐	☐	0.000	0.000	0
6	00	0.000	☐	☐	☐	0.000	0.000	0
7	00	0.000	☐	☐	☐	0.000	0.000	0
8	00	0.000	☐	☐	☐	0.000	0.000	0
9	00	0.000	☐	☐	☐	0.000	0.000	0
10	00	0.000	☐	☐	☐	0.000	0.000	0
11	00	0.000	☐	☐	☐	0.000	0.000	0

Figure 6- 10and drop

7. The track runs

After the track is edited, modified, and saved, the edited track needs to be tracked. Tracks Run: Run the current track, run the track after the run, run empty, run automatically as a whole.

7.1 Run the current track

In the process of product processing, sometimes it is necessary to make a re-spray of the product or try the spray effect of the spray valve, you can choose to

run the "current trajectory".

Run the current track flow: 1: Check the track you want to run→2: Check the Run current track option→3: Click the one-step run button to achieve the currently selected track, as shown in Figure 7-1.

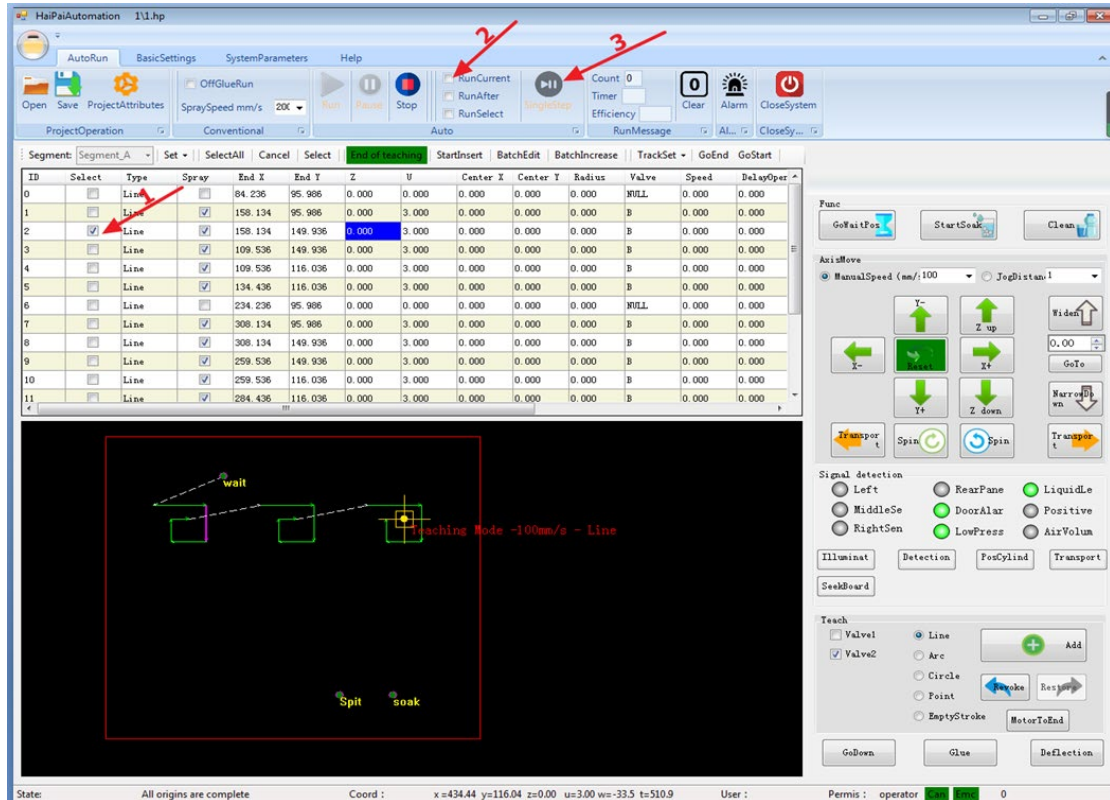


Figure 7-1 1runs the current track

7.2 The track after running

In the product spray processing process due to a number of other reasons half-way down, resulting in the product spray processing only part of the completion, in this case, if you want to finish the rest of the use of the "run after track" function.

Run the current track flow: Check the first track you need to run→ check the "Track after run" option → click the "Run one step" button to run the selected and subsequent tracks, as shown in Figure 7-2.

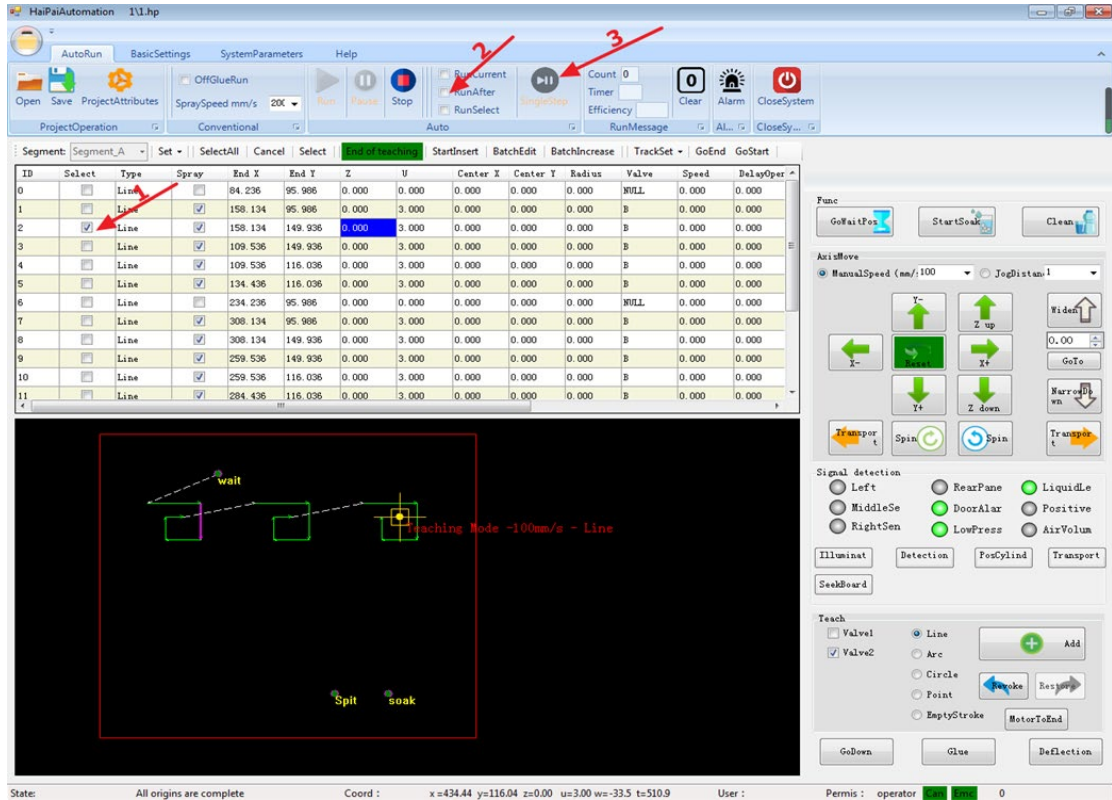


Figure 7-2 2Runs After Track

7.3 Run the selected track

Sometimes when running a selected track because there are more tracks to select, in order to save staff time, we can now use the "Run selected track" function.

Run the selected track flow:1: Select the first track that needs to run the track and the last track that needs to run→2: Check the Run Select track option→3: Click the "Run one step" button to achieve the selected track and the track after it. Note:(All tracks between the beginning and end of the system run when using the run selected track, whether or not the intermediate track is checked) as shown in Figure 7-3.

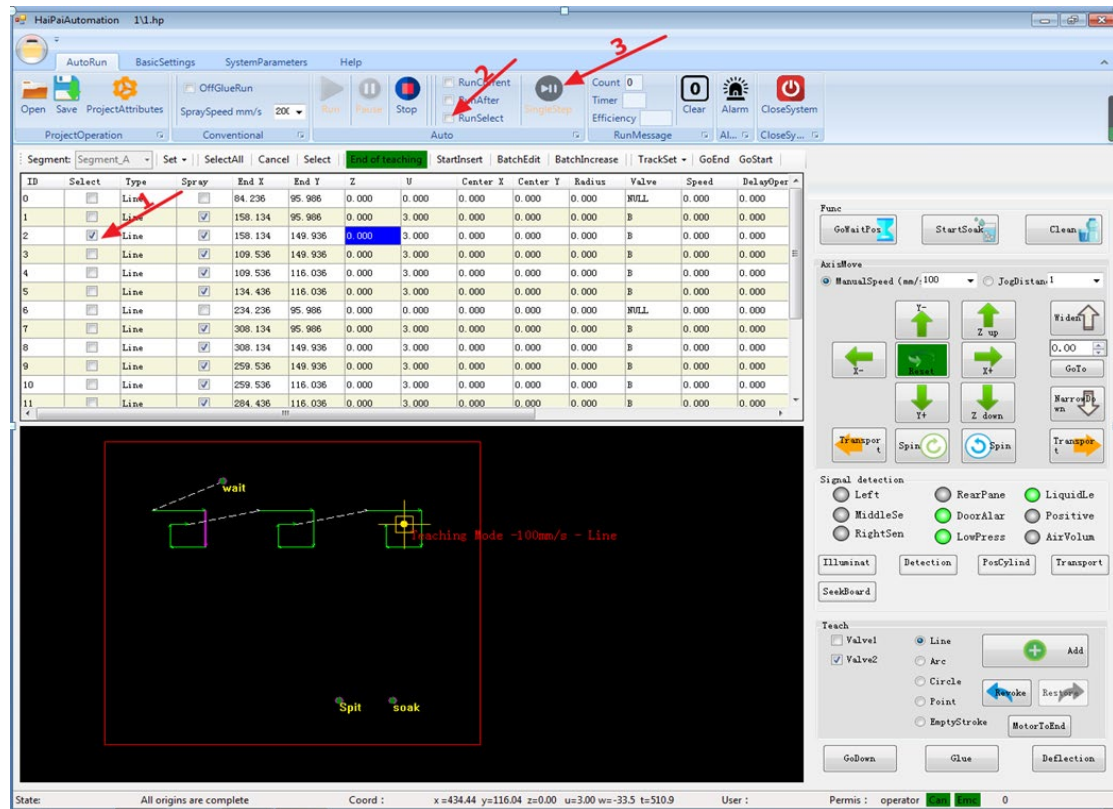


Figure 7-3 3Runs the selected track

7.4 Run empty

After we have edited the trajectory of a product, we need to do a simulated run of the run track. In order to detect whether the route of the running track meets the requirements of the product and process, the empty running function is required.

Empty run operation process: check the "empty run out glue" option - click the "Start run" button, as shown in Figure 7-4.

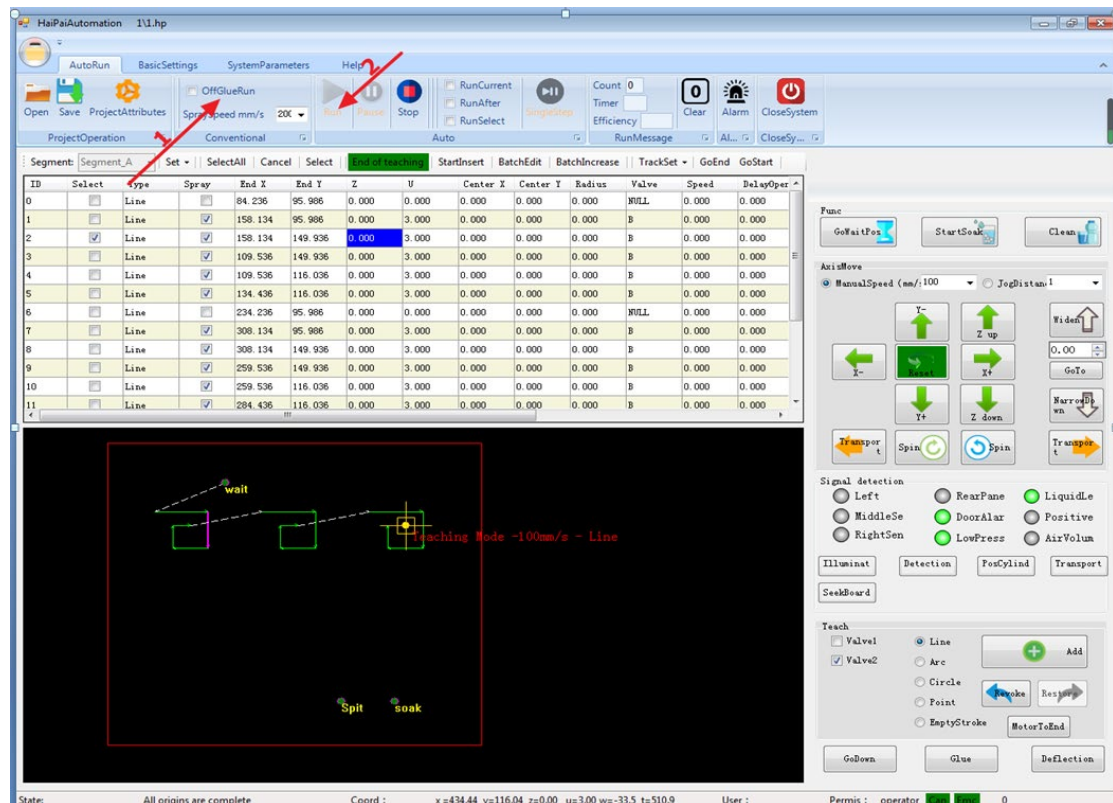


Figure 7- 4running out of glue

7.5 The whole runs automatically

When the staff confirms that the edited trajectory meets the requirements of the production process document and does not require any changes, the worker should save the edited file again, at which point the equipment can officially enter the mass production state.

Overall automated running process: Cancel the "Empty run out glue" option→ click the "Start Run" button. The device is now operational. Device status information is displayed in the lower left corner of the device interface, as shown in Figure 7-5.

Note:(The equipment waits for the left photoelectric (incoming plate sensor) to sense the signal when the transmission begins to turn, waiting for the product to flow into place photoelectric (in place sensor) when the transmission stops turning, the equipment began to spray processing. The moving shaft of the finished equipment is returned to the waiting position, and the positioning cylinder opens and the delivery begins to turn, flowing out of the finished product. When the product flows out and to the right photoelectric (outboard sensor) that is, when

the right photoelectric (outboard sensor) is removed from the positioning cylinder drop, the equipment into the next round of work.)

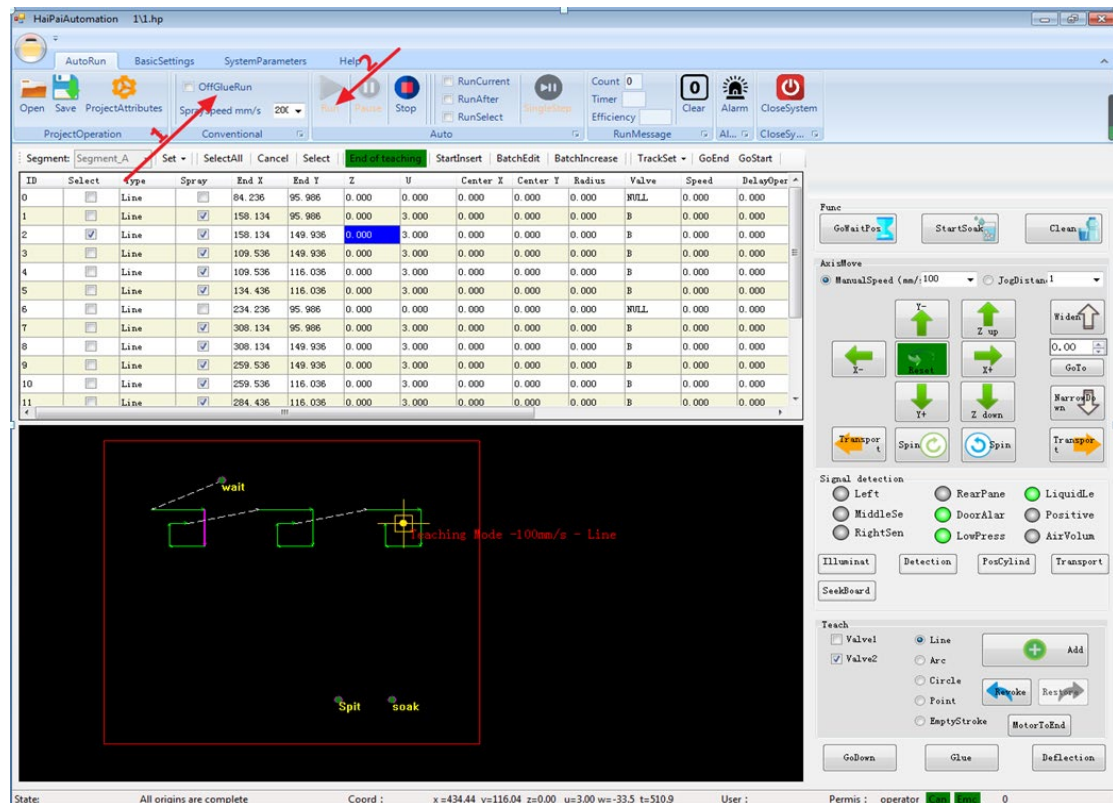


Figure 7- Senters the working state

8. Safety precautions

Safety precautions are divided into equipment electrical safety, operational safety and equipment maintenance safety.

8.1 Electricity is safe

The voltage connected to this device is AC220V/50HZ voltage, which can cause some damage to human body and even threaten human life safety and a series of disasters after the human body is exposed to this voltage. To avoid unnecessary losses, keep a few notes:

1. Operators are strictly prohibited from scerrawling wires in this equipment.

2. Personnel are prohibited from changing the existing electrical appliances and line guards in the transfer equipment at will.
3. Equipment failure needs to be repaired and maintained should disconnect the equipment power supply furnace road, never in the equipment power or run time to repair the equipment.
4. Hands or other items cannot be used to touch the live part of the device while the device is powered on.
5. Equipment operators should prevent spray materials and cleaning liquids from flowing into the equipment electrical box and equipment of the industrial control machine, to avoid short circuits and breaks of equipment damage equipment and industrial control machines and cause other accidents.
6. Equipment maintenance personnel should regularly check whether the equipment line is loose, shedding, wear, disconnection and line aging.

8.2 Safe to operate

The first is that enterprises must take measures to ensure that the machinery itself is in a safe state. As an employee, the operating status of the equipment should always be concerned when operating the machinery, and the operator should pay attention to the following precautions when operating the equipment.

1. Before going to work must go through the equipment manufacturer after-sales personnel training, master the operation of the equipment and operating procedures before you can operate this equipment, do not have no training or permission to operate this equipment without authorization.
2. Safety checks should be carried out on the machinery before operation, and the equipment can only be put into use after it has been determined that the equipment is normal.
3. In strict accordance with the safety operating procedures of the equipment, do not

change some of the equipment's system parameters and hardware configuration parameters.

4. Safety guards for mechanical equipment are not allowed to be removed without need.
5. When the equipment is running, do not extend human body parts into the equipment to observe the processing of the product.
6. If the processing of the equipment fails, the processing product should not be forcibly removed from the equipment in order to avoid damage to the processing product in the state of operation of the equipment.
7. Equipment operation and stop process shall not be free to tap the equipment and equipment accessories.

8.3 Maintain security

Equipment in the event of failure needs to be in-service maintenance and repair treatment of equipment, such as improper handling during maintenance and repair may cause secondary damage to equipment and threaten the personal safety of equipment maintenance personnel. The service personnel should pay attention to the original condition of the equipment while carrying out repairs.

1. Equipment in the transport refueling maintenance and maintenance can not be used hand to touch the equipment to transport moving parts, should use other items.
2. Before repairing the equipment, check that the electrical, liquid and aerodynamic sources are disconnected.
3. It is strictly forbidden to have direct contact with the equipment and moving parts while the equipment is in motion during repair.
4. The person in charge of equipment management should carefully review and fill

out the maintenance record form to ensure that the record is true and valid, and keep the record for reference.

5. After completing the equipment repair, clean the site hygiene in time, and ensure that the maintenance tools and debris left inside the equipment, thus affecting the normal operation of the equipment.
6. Before the equipment is turned on, the equipment protection device, fastening screws, electricity, liquid, aerodynamic source switch is intact, and then carry out a trial production test, inspection qualified before it can be put into use.

9. Common equipment failures

Common equipment failures include damage to accessories, incorrect assembly parameter settings, system parameter settings and a series of faults caused by the loss of cables or poor contact, as well as improper operation of the operator will also cause the equipment to fail to function properly. In the event that the equipment fails and does not function properly, the operator shall promptly inform the relevant equipment maintenance personnel to troubleshoot and repair the equipment.

9.1. Common equipment failures

Below is an analysis of common anomalies and their problems, which technical operators can refer to in Table 5 below for simple repairs. If you still can't solve the problem, please contact the relevant after-sales engineer.

Abnormal failure	Problem analysis
The button is pressed, the power LED is not on, and the device does not start.	1, insurance burn-out; 2, relay damage; 3, AC contact contact contact contact burned out.
The glue gun doesn't come out of the glue	1, the dispensing valve adjustment nut is locked; 2, out of the hose whether stuck; 3, plastic bucket whether there is air pressure;

	4, whether the valve is open; 5, the dispensing solenoid valve is damaged; 6, whether the glue gun is blocked, (after each spray to clean).
After you start running, the program does not respond	1, detection into the board electric eye; 2, detect whether the computer's IO point has a signal.
The main screen icons X, Y, and Z cannot move the three axes	1, check whether the servo motor driver has a power input; 2, servo drive whether to alarm; 3, whether the emergency stop switch is pressed, air pressure is normal.
The lighting (UV) light is not on	1, the switch is not damaged; 2, the lighting tube is burned out.
The conveyor motor cannot be started	1, burned out and no signal output; 2, whether the electrical appliances are damaged; 3, whether the chain is stuck; 4, the chain is too loose.
Turn on the power switch, no reaction;	1、 No single-phase 220V voltage input; 2、 Whether the total power switch is on.

9.2. The accessory is damaged

Equipment accessories damage is relatively intuitive, find and confirm that the damaged parts to remove it to find instead of accessories to replace it, the following list of several common accessories damage repair methods.

9.1.1. sensor

Left optoelectronics, in place photovoltaics, right photoelectrics:

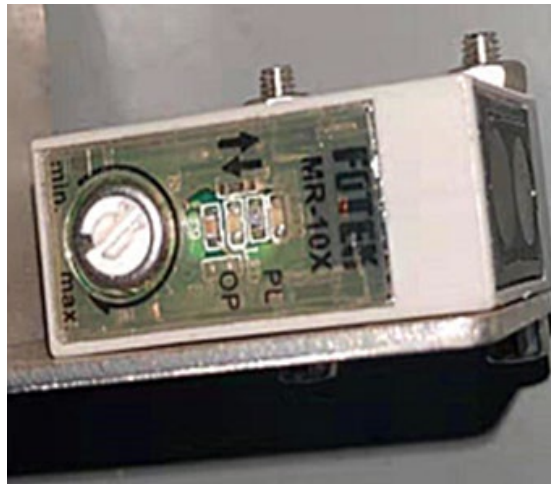


Figure 9- 1 Optoelectronic light

Brown -----24V-1(power supply	Blue -----0V-1(Power -).
White ----- input signal	Black ----- empty

Z-axis origin:



Figure 9- 2 Z-axis origin

Brown and white -----24V-1(power supply plus).	Blue -----0V-1(Power -).
Black ----- input signal	Pink ----- empty

Z-axis positive and negative limits:



Figure 9- 3 Z-axis plus or minus the limit

Brown and white -----24V-1(power supply plus).	Blue -----0V-1(Power -).
Black ----- input signal	Pink -----24V-1(power supply plus).

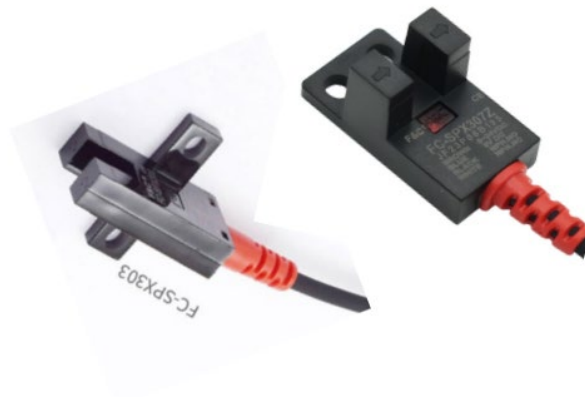
X, Y axis origin:



Figure 9- 4 X,Y axis origin

Brown -----24V-1(power supply	Blue -----0V-1(Power -).
Black ----- input signal	White ----- empty

X,Y axis positive and negative limits:



Figures 9- 5X,Y plus or minus the limit

Brown -----24V-1(power supply	Blue -----0V-1(Power -).
Black ----- empty	White ----- input signal

9.3. There was an error with the hardware parameters

1. Step driver segmentation (pulses) and current regulation. When the driver is not connected to the motor, if the direction of the motor is opposite to the actual requirements, the switchable drive can be connected to the motor and the A-plus, A-line sequence, as shown in Figure 9-4.

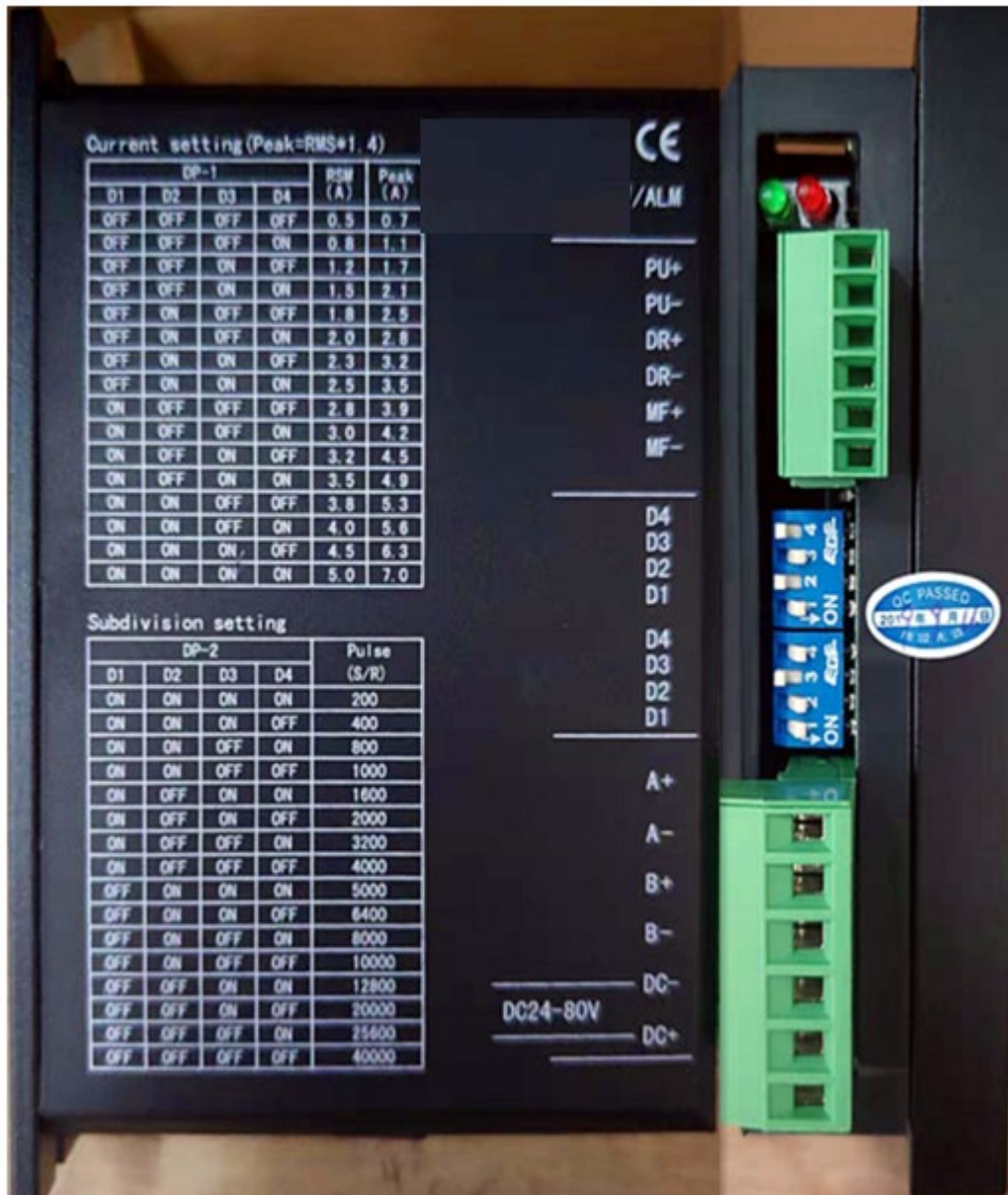


Figure 9- 3Parameters

Segmentation (number of pulses)	2000(fixed).
current	4.2A-6.5A

2. Fuji Servo Drive General Parameter Settings.

Servo code	The code name	Set the value	Set the name
P1-3	Instruction pulse input mode, pattern setting	30	Differential, command pulse/symbol

P1-4	Switch the direction of operation	1	Forward instruction CW direction
P1-5	The number of pulses entered by instructions for each week of rotation	X/Y/Z=10000、U/R=36000	Enter the pulse volume setting
P1-8	The number of output pulses per week of rotation	Consistent with pulse volume 1:1	The amount of feedback is set
P1-11	Output pulse phase switching as you rotate	1	A-phase advances as it rotates
P1-15	Self-adjusting gain 1	15-18	The higher the number, the shorter the command tracking and positioning fixation time, but if it is too large, the motor vibrates
P3-51	OUT1 Signal Allocation - Servo Foot 15 Alarm Output	76	Alarm detection (B contact).
P3-52	OUT2 Signal Distribution - Servo 16 Brake Output	14	The timing of the braking

3. Fuji Servo Drive Parameter Setting Steps.

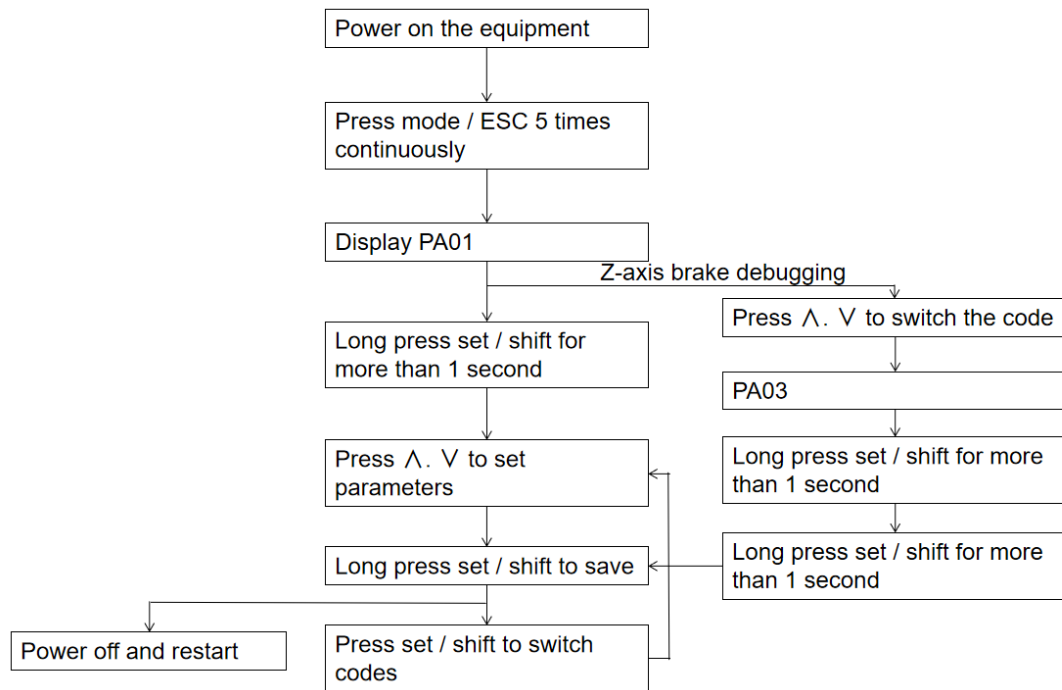


Figure 9- 4debugging steps

4. Fuji drive fault code and troubleshooting.

function	The error code	The cause of the error	The exclusion method
Overcurrent	OC1	The current output from the servo amplifier exceeds the specified value	
	OC2	The motor power line match is incorrect	Check the wiring of U/V/W/PE
		The servo amplifier is damaged	Replace the servo amplifier
speeding	OS	The servo motor speed exceeds 1.1 times the maximum speed	
		The power line match is wrong	Check the wiring of U/V/W/PE
		The gear ratio is set incorrectly	Check the drive parameters
overvoltage	HU	The DC voltage inside the servo amplifier is above the upper limit	
		The supply voltage is too high	Confirm that the supply voltage is standard
		The external regenerative resistor is wiring incorrectly	Modify the wiring of the external regeneration resistor
		The regenerative transistor is damaged	Replace the servo amplifier

Encoder exception	EC1	The encoder built into the servo motor is abnormal (but communication is normal)	
	EC2	Encoder data is abnormal	Find and exclude sources of interference
		The encoder has failed	Replace the servo amplifier
The combination exception	CE	The motor does not match the power and model of the servo amplifier.	Replace matching motors and drives (possibly the drive was misplaced when hitting the battery)
The regenerative transistor overheats	CH	The regenerative transistor built into the amplifier overheats	
		The regenerative electricity is too large	Extend the deceleration time
			Add an external resistor
The encoder communication is abnormal	EC	The internal encoder of the motor is either off or damaged	Remove the motor end encoder to see if the wiring inside has come off (this need to be careful not to cause secondary damage to the motor end encoder), contact the equipment manufacturer to request the replacement of the servo motor
		Breaked wiring or poor contact, interference, etc	Check that the encoder extension cord is well welded, that the line sequence is incorrect, and that the contact with the drive is good
The control circuit is abnormal	CE	Servo amplifier and current fault	Replace the servo amplifier if the power-on still alarms
overload	OL1、OL2	OL1 instantaneous torque is too large, OL2 long-term torque is too large, motor stuck, machinery is too heavy, acceleration and reduction speed is too fast, running speed is too fast, servo amplifier damage	Check the power cord U/V/W/PE wiring, confirm that the brakes (with brakes) are open, adjust the time of the motor increase or decrease speed and operating speed, and rule out the cause of the motor stuck. Replace the servo amplifier.
The main	LUP	The supply voltage is too low	Improves the supply voltage

road voltage is low		This phenomenon usually occurs instantaneously when the power is lost	This situation does not matter
Incompetent	POF	The enable signal is not switched on	Make sure that 24V and 0V are connected to the drive within the pulse line
The deviation is out of reach	OF	The P2-62 deviation exceeds the detection value by more than the position deviation set inside the servo amplifier	
		The connection of the power wiring is wrong, and the gain is low. The pulse frequency is slowed down too quickly	Check the wiring of the power wiring U/V/W/PE, adjust the gain, and extend the acceleration and deceleration time
Initialize the error	E	The initial position inside the encoder is not correct	
		The encoder has failed	Replace the servo amplifier
Note: Common alarm codes are: 0C1, 0C2, CE1, CE2, EC, 0L1, 0L2, POF.			

5. System failure: It is divided into operating system failure and coating system failure. If the operating system failure operators should promptly contact the equipment manufacturers for system maintenance, do not carry out repairs without authorization, to avoid secondary damage to the industrial control machine, otherwise the consequences themselves bear. Coating system failure is generally the loss of coating procedures, or the loss of coating system profile damage and deletion, such as similar circumstances should promptly contact the equipment supplier to reissue the complete coating system, and under the guidance of equipment manufacturer personnel to complete the installation of equipment and coating system parameters adjustment, the equipment after the completion of the test machine treatment can continue the processing of the product. Do not in the equipment manufacturer after the replacement procedures do not get the equipment manufacturer personnel guidance and parameters debugging on the machine to run the equipment, which may cause irreparable damage to the mechanical structure of the equipment.

9.4. Mechanical structural failure

Equipment in the operation process will produce a certain degree of jitter, so the mechanical structure of the equipment for too long will appear screw loose or fall off, resulting in the operation of the equipment is not smooth or even can not run at all. Common mechanical structural failures are found in several places.

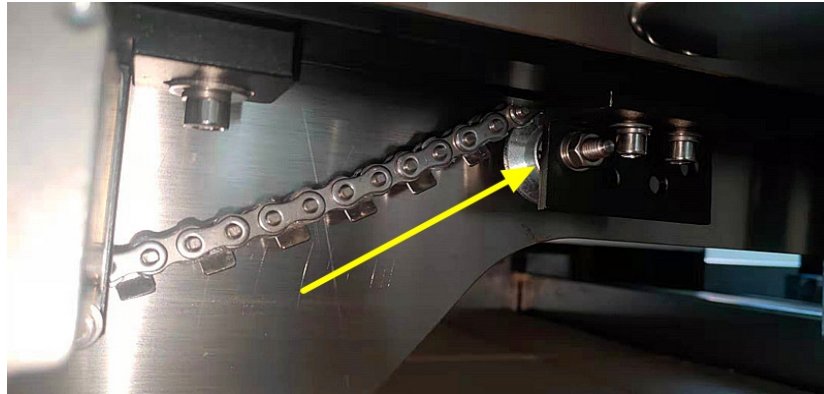


Figure 9- 6wheels cause the conveyor chain to fail

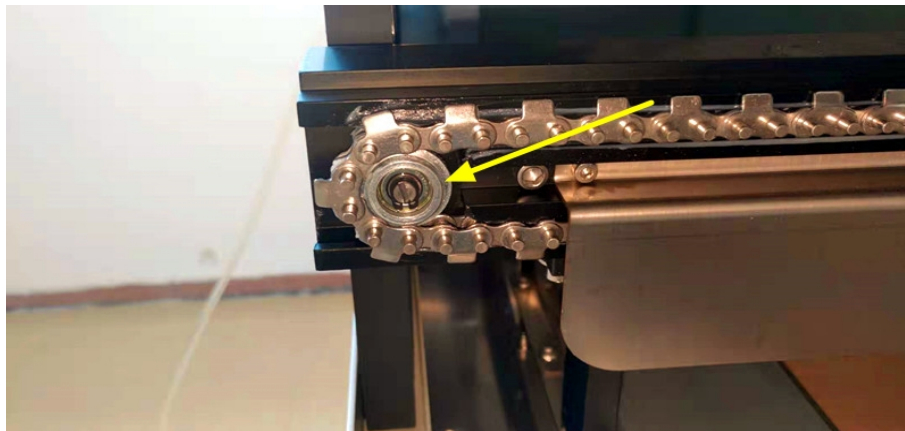


Figure 9- 7loosening of the sprockets prevents the conveyor chain from working

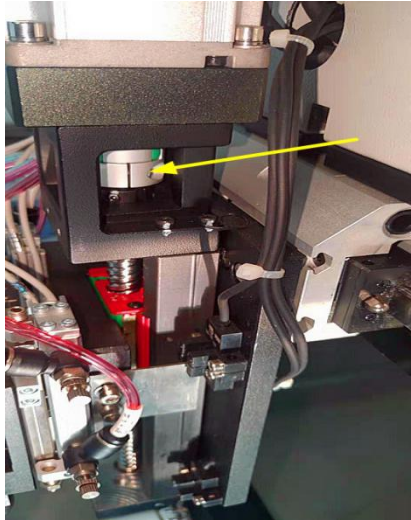


Figure 9- 8coupling loosens the moving axis and does not work properly



Figure 9- 9Z-axis box loose

10. Equipment maintenance and maintenance

The length of service life of any equipment and the stability of equipment operation depends to a large extent on whether the operation of the equipment by the equipment operator is reasonable and whether the equipment is operated periodically and maintained, in order to extend the service life and stability of the equipment, so at the end of the idle equipment and production work to carry out timely maintenance and maintenance of the equipment, in order to extend the service life and stability of the equipment. This allows the equipment to bring better production benefits to the company.

10.1. The maintenance cycle of the equipment

The maintenance cycle of the equipment is as follows: I hope your technical operators will carefully read and follow the contents of the table.

Check the item	Check the cycle
Keep the conveyor chain clean (cleaned before work every business day)	Once a shift
Observe whether the conveyor chain is normal, whether there is vibration, check the chain tension, apply a layer of grease to the chain	Once a week
Clean up the debris on the amplitude and guide rods and apply a grease to the wire rod and guide rod	Clean once a day and apply oil once a week
Check the health of the conveyor motor and the tightness of the chain and apply a grease to the chain	Once a week
Check that the pressure cylinder pressure is normal and the safety valve is working properly	Once a shift
Check that the servo drive is OK and that there is an alarm	Once a shift
Check the nozzle for blockages, wash the residue inside the nozzle, and check the PE tube connection for leakage	Once a shift

Check the screws in the drive part regularly for looseness	Once a week
Check the bearing operation and add grease to the housing	Once a week
Glue cleaning: If not used for a long time (more than 2 consecutive days), the liquid in the infusion tube and nozzle should be cleaned up;	Once a week
X, Y, Z, three axes to keep clean, regular weekly lubrication;	Once a week

10.2. Maintenance and maintenance of the conveyor

The maintenance and maintenance of the conveyor device is directly related to the operation effect of the whole conveyor device and the smoothness of the production line, so it is very important to the maintenance and maintenance of the conveyor device. It mainly includes the maintenance of drive shaft, drive chain and ambience structure.

10.3. Maintenance of the drive shaft

Regular monthly to the transmission shaft to add lubrication, when adding lubricants to push the drive shaft back and forth, so that each side of the transmission shaft is uniformly clothed with a layer of grease, to prevent its glue sprayed on the shaft dry up can not push the adjustment block, our engineers will be in the new machine training equipment operators in recent detail. Figure 10-1 shows the drive shaft.

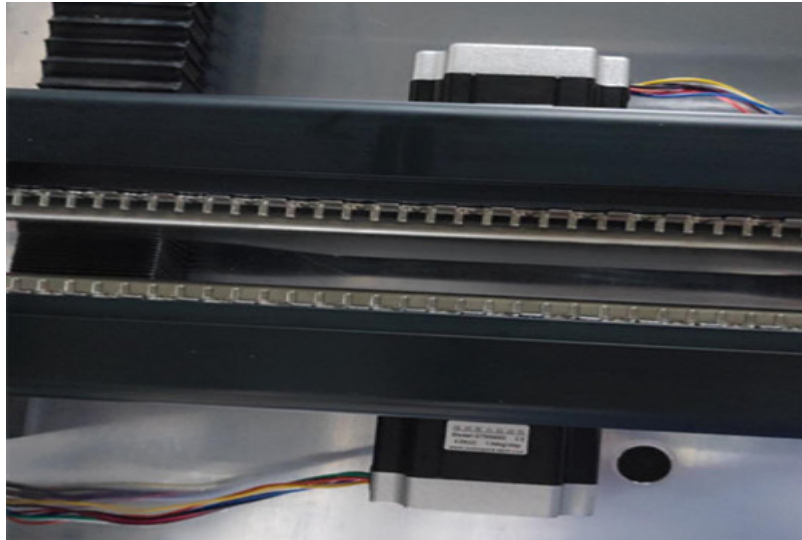


Figure 10- 1 Convey the drive shaft

10.4. Maintenance of the drive chain

The drive chain should be regularly filled with grease to make it run smoother and smoother, sometimes the chain is too dirty, the chain needs to use alcohol or thinner with a brush or cloth to clean up the residue on the chain link; Chain once a week to check for deformation broken chain, the chain surface needs to be completed after each shift of simple cleaning, half a month must be large cleaning, to prevent glue curing on the chain and thus increase the load of the conveyor motor and chain caused by the delivery motor due to long-term overload operation and damage.



Figure 10- 2 Drive Chain

10.5. Maintenance of the moving shaft

In a three-axis device, the motion axis has a Y-axis, an X-axis, a Z-axis, and if a four-axis device has a U-axis, such as keeping the motion axis running smoothly. Grease should be added regularly.



Figure 10- 3 Motion axis



Figure 10- 4 Sports rails

10.6. Maintenance and maintenance of the display and its industrial control machines

No magnetic objects can be used to approach the display screen, and no corrosive liquid wipe screens, mouse keys, etc. are available for plastic parts. In use please note the cleaning, usually can use a neutral liquid (e.g. alcohol) moist soft cotton cloth to gently wipe the screen and mouse key surface can be.



Figure 10- 5 Research China Industrial Control Machine

10.7. Maintenance and maintenance of the electric box

The electric box must not place debris, cooling fan do not block, prevent the electrical components in the electric box overheating caused by failure and fire, the electric box has high-voltage electricity, can not spill water, oil-stained liquid, non-professionals do not open the electrical control box door, to prevent electric shock accidents and fires. Equipment maintenance personnel once a month to check whether the electrical wire connector is loose, whether there is oxidation connector, if necessary to find professional replacement in a timely manner. To ensure the proper operation of the equipment and the safety of the operator.



Figure 10- 7 Control the electric box

11. appendix

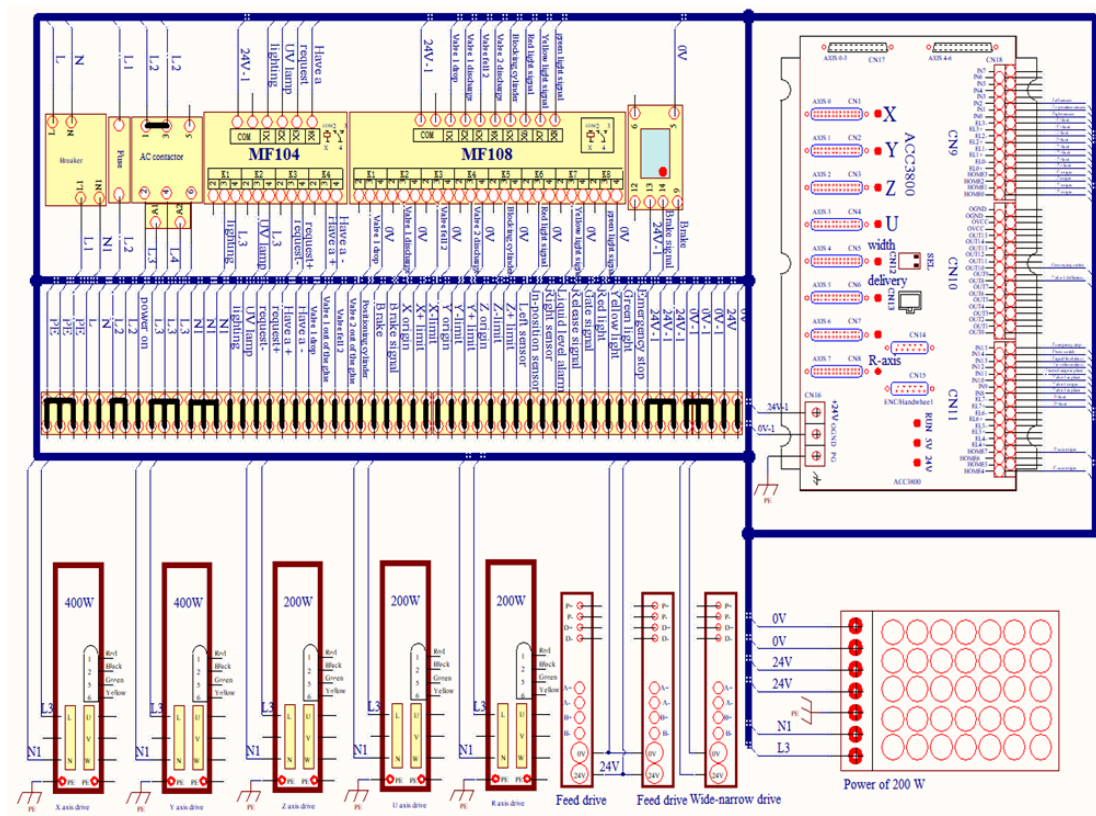


Figure 11- 1wiring diagram of the box dis

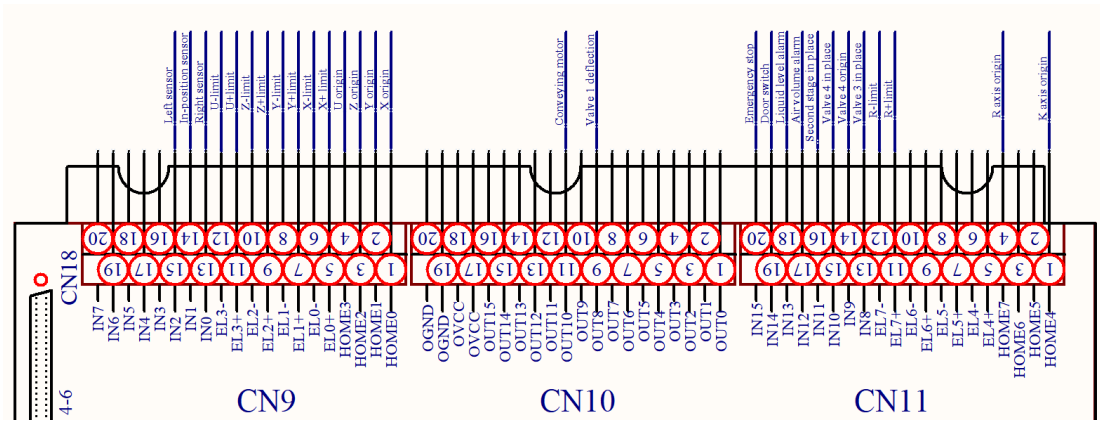


Figure 11- 2Master I O assigns points

The main card IO allocation table			
input		output	
IN0	Left photoelectric	OUT0	
IN1	Photoelectric in place	OUT1	
IN2	Right photoelectric	OUT2	
IN3		OUT3	
IN4		OUT4	Valve 1 out of glue
IN5		OUT5	
IN6		OUT6	
IN7		OUT7	
IN8		OUT8	
IN9		OUT9	
IN10		OUT10	
IN11		OUT11	
IN12		OUT12	
IN13	Level alarm	OUT13	
IN14	Threshold switch	OUT14	
IN15	Emergency stop	OUT15	
HOME0	X-axis origin	EL0+	The X-plus limit
		EL0-	X- Limit
HOME1	The origin of the Y axis	EL1+	Y-limit
		EL1-	Y-Limit
HOME2	Z-axis origin	EL2+	Z-limit
		EL2-	Z- Limit
HOME3	The origin of the U-axis	EL3+	Z-limit
		EL3-	Z- Limit
HOME4	Wide and narrow origin		
HOME5			
HOME6			
HOME7	The origin of the R axis	EL7+	The limit of the R-plus

		EL7-	R-Limit
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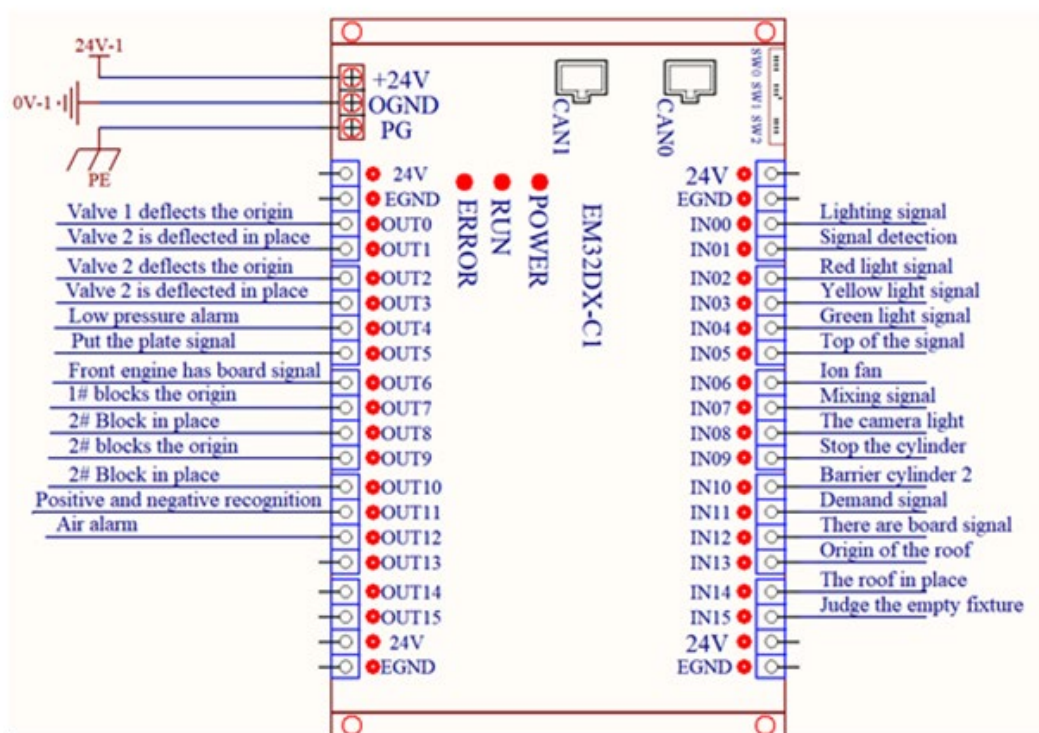


Figure 11-3 3Expand card IO signal allocation

Expand the card IO allocation table			
input		output	
IN0		OUT0	Lighting signal
IN1		OUT1	Heartbeat
IN2		OUT2	Red light signal
IN3		OUT3	Yellow light signal
IN4	Low pressure alarm	OUT4	Green light signal
IN5	Put the board signal	OUT5	Top plate signal
IN6	The front machine has a board signal	OUT6	
IN7		OUT7	
IN8		OUT8	Camera light source
IN9		OUT9	Block cylinder 1
IN10		OUT10	
IN11		OUT11	Ask for a board signal
IN12		OUT12	There is a board signal
IN13		OUT13	
IN14		OUT14	
IN15		OUT15	

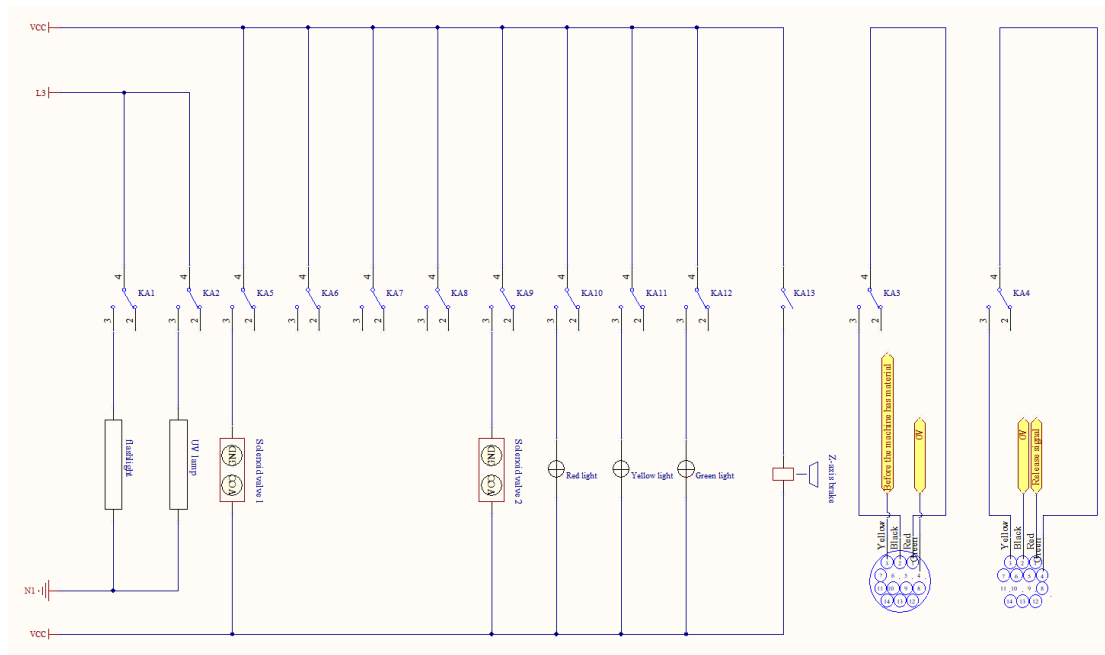


Figure 11- 4Auxiliary circuits

Fuji ALPHA5 Smart Plus and Resai ACC3800 axis signal docking table

Fuji ALPHA5 Smart Plus		Resai ACC3600	
Pin number	Description of the function	Pin number	Description of the function
1	24V power supply	14	24V power supply
2	Enable the input signal	3	Enable output
27	A-plus feedback output	17	A-plus feedback input
26	A- Feedback output	4	A- Feedback input
29	B-feedback output	18	B-feedback input
28	B- Feedback output	5	B- Feedback input
11	Z-feedback output	19	Z-feedback input
10	Z- Feedback output	6	Z- Feedback input
36	P-pulse input	23	P-pulse output
35	P- Pulse input	11	P- Pulse output
18	D-pulse input	9	D-pulse output
17	D- Pulse input	22	D- Pulse output
19	0V	1	0V
20	OUT1-20 foot servo alarm output	2	Drive the alarm input
21	OUT2-21 foot servo brake output		

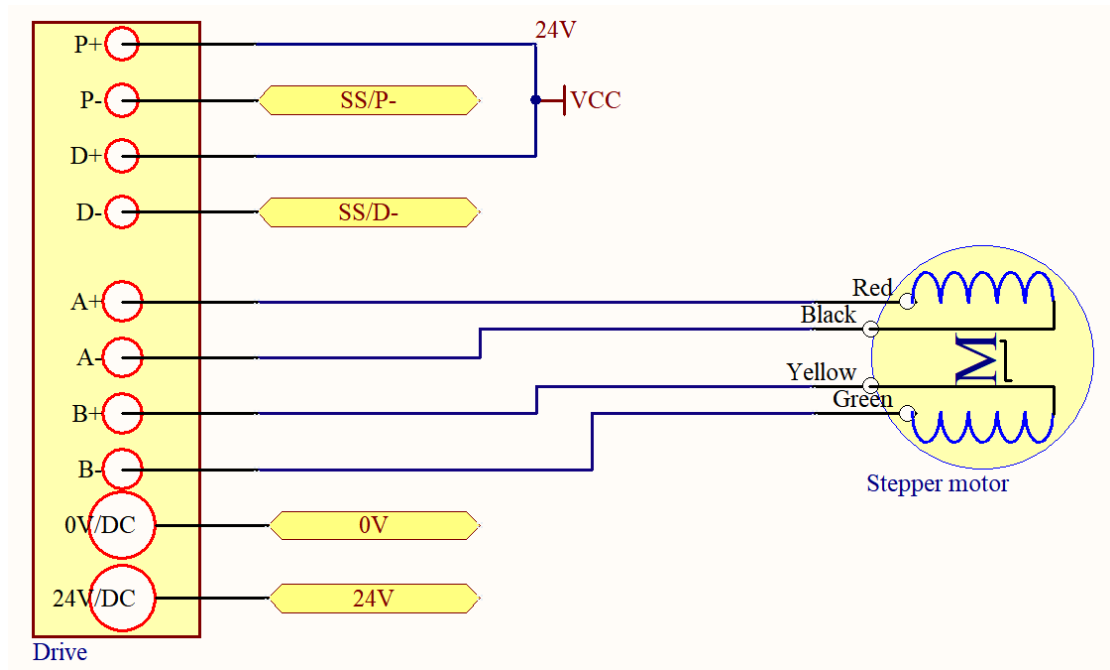


Figure 11- 5Stepper Motor Wiring Diagram

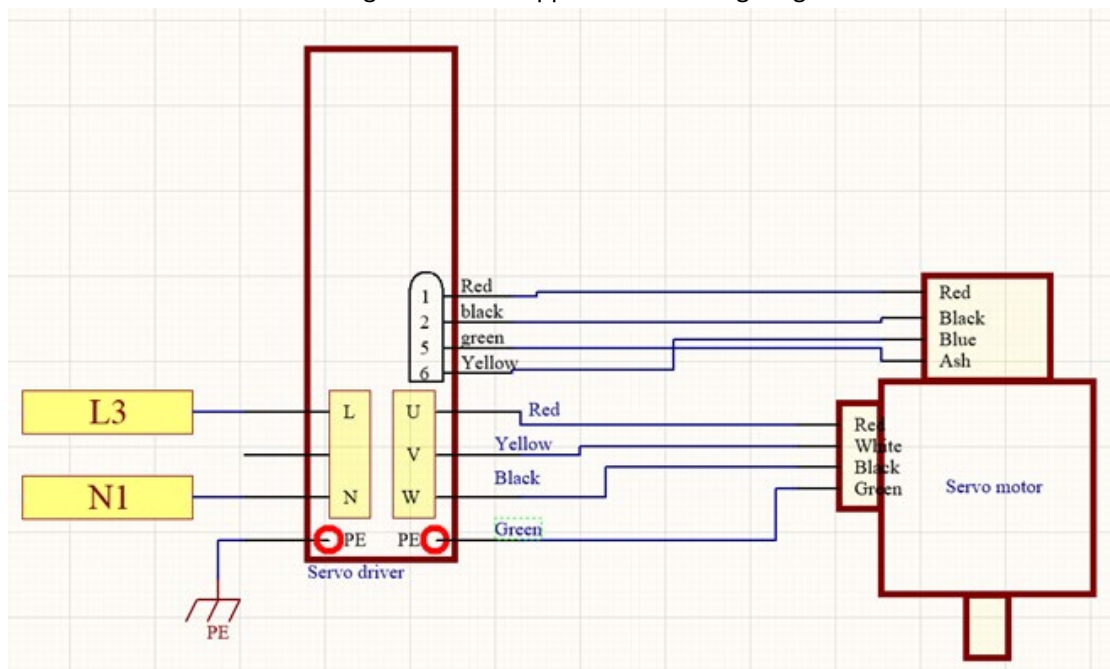


Figure 11-6 6Servo motor wiring diagram

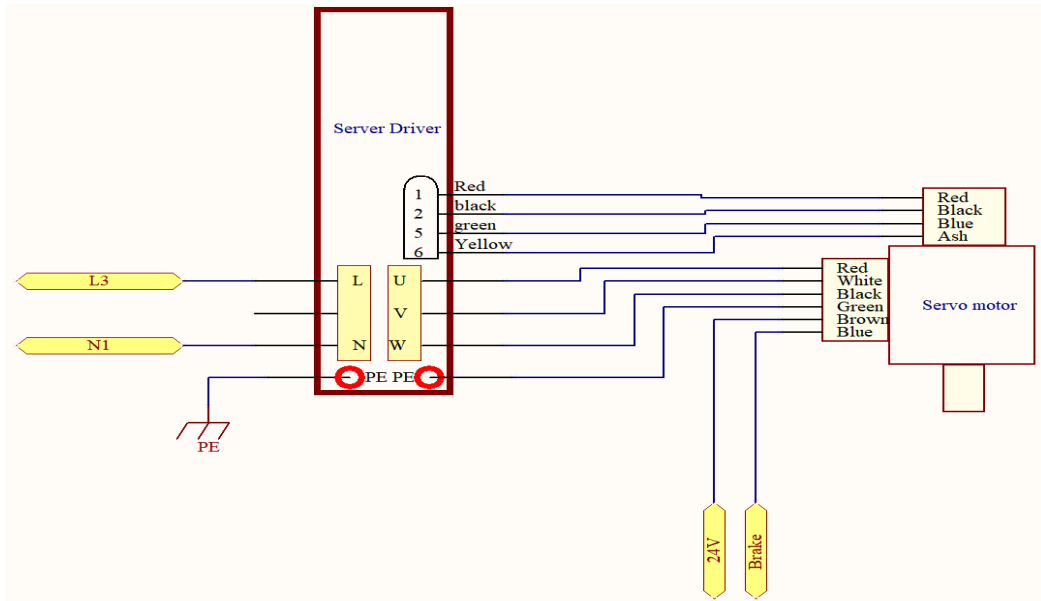


Figure 11-7 7 Z shaft belt brake servo motor wiring diagram

Random delivery tools

serial number	The name of the item	specific ation	quantity	Image
1	Open the wrench	5.5-7	≥ 1	
2	Open the wrench	8-10	≥ 1	
3	Open the wrench	10-12	≥ 1	
4	Open the wrench	12-14	≥ 1	
5	Allen key	metric system	≥ 1	
6	Active wrench	7 inch	≥ 1	
7	Bevel pliers	150mm	≥ 1	
8	Carp pliers	150mm	≥ 1	

9	screwdriver	Dual-use	≥ 1	
10	screwdriver	Little cross	≥ 1	
11	screwdriver	A small word	≥ 1	
12	Raw material belt		≥ 1 volume	
13	Electric tape	M3	≥ 1 volume	
14	Tie the straps	4*200 mm	≥ 20	