

# R-450M Model Router machine

## Operating Manual



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## Preface

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Model : R-450M Model Router Machine

Serials No. : \_\_\_\_\_

Spindle No. : \_\_\_\_\_

Software Version: \_\_\_\_\_

Date of Production: \_\_\_\_\_

The R-450M series and logo are owned by VECTRON. This manual is subject to change or update without notice.

### 一、R-450M Functions & Features:

The R-450M is a high-speed rotary cutter that separates a multi-piece PCB from the programmed path. Widely used in digital, communication, lighting and other fields. Improve the quality of manual folding, V-CUT, stamping, etc., to improve quality and reduce scrap.

1.Ultra-fast cutting speed. Designed for high-quality design, the high-speed drive platform and high-speed spindle provide you with the cutting speed ahead of the industry, solve the problem of slow multi-plate splitting, and achieve high efficiency and lean production.

2.Modular structure, high stability and convenient maintenance. Modular servo control system with high stability, equipped with advanced grinding screw and high-precision guide rail, cutting precision up to  $\pm 0.02\text{mm}$ , to meet various cutting

needs and ensure production quality. Modular electronic control system, quick troubleshooting, convenient equipment maintenance and upgrade.

3. Alarm light curtain, safe production. There are alarm light curtains on both sides of the working platform. When the equipment is running, the light curtain is blocked, and the equipment will automatically stop running to avoid the damage caused by the accidental operation of the equipment.

4. Multiple identical or different programs can be used on the same fixture and positioned by Mark to ensure cutting accuracy.

5. Self-diagnostic function. Error message self-diagnosis system, which can diagnose the fault during the operation of the device, find fault easily, and resume production in time.

6. Segmented undercut, low-cost production. Tool life management monitoring, after cutting a certain distance, the cutter will automatically rise/fall according to the setting to another uncut cutting edge position to extend the life of the milling cutter and reduce the cost of consumables.

## **二、Warranty period and Service scope:**

This equipment has been commissioned and checked for OK before leaving the factory. The use of the company within the following conditions will guarantee it.

### **1. Warranty Period:**

This equipment is one year after delivery.

### **2. Service Scope :**

The company will repair it for free during the warranty period, but it will not be covered under the following conditions.

★Use materials and components that are not specified by

VECTRON company.

- ★Improper use by the operator or improper maintenance.

- ★Normal loss of consumables.

- ★Other natural disasters.

- ★The color of the machine casing is naturally faded.

- ★Does not affect the heating of the machine under normal operation, noise changes.

Notes: If you encounter problems that you don't understand in the actual process, please check the instructions or contact with VECTRON.

### **3.Free service range:**

This machine will be free to service the following conditions after leaving the factory.

- ★Assembly commissioning and operation.

- ★Processing program production or education training and related technical guidance.

- ★Operation, circuit analysis and other related education training.

### 三、Technical Parameters

项 目 Items	技 术 参 数 Spec.
机器型号 Model	R-450M
外观尺寸 Mechanical Dimension	650*1250*1365mm(L*W*H) (不含地脚和灯塔) Excluding the anchor and Lighthouse
重量 Weight	约 450KG About450KG
重复精度 Repeat accuracy	±0.02mm
吸尘器尺寸 Vacuum Size	780*500*460mm(L*W*H)
吸尘器功率 Vacuum Power	0.75KW
吸尘方式 Dust Collection Method	下吸尘 Bottom Suction(External-vacuum/Built-in)optional
工作台尺寸 Work Table Size	390mm*560mm
最大切割尺寸 Max Route Size	310mm*480mm
传统系统 Drive System	X/Y/Z 三轴伺服马达控制 X/Y/Z Three axis servo motor control
切割主轴 Routing Spindle	60000 转/分钟 自冷式 60000rpm/min Automatic Cooling
切割速度 Routing Speed	1-100mm/sec
切割精度 Routing Accuracy	±0.02mm
坐标移动速度 Moving Speed	800mm/s
铣刀 Milling Cutter	Φ0.8-3.0 左旋 Φ0.8-3.0 L
刀具寿命 Tool Life Control	程序控制 Software Program Control
安全防护 Safety Protection	安全光幕 Safety ling curtain
异常报警功能 Error Alarm	是 YES
显示器 Monitor	17 寸戴尔显示器
编程方式 Programming Mode	通过键盘控制 CCD 移动、自动导航, 简单易学 Through the Keyboard to control the CCD mobile, Automatic navigation,easy to learn.
电源 Power Supply	AC 220 2.2KW

Notes:The above parameters are standard configuration. If there are special requirements, they can be customized according to customer requirements. The technical parameters are subject

to change without prior notice. The final interpretation is owned by “VECTRON-TECH(DONGGUAN)ELECTRONICS EQUIP CO.,LTD.”.

## **四、Installation;**

### **1.Environment setting**

1.1 This equipment should be installed in a dry and ventilated place. Do not install it in a place subject to corrosion and flammability.

1.2 This equipment should be installed in a place where there is no sunlight and heat is large.

1.3 This equipment should be installed in a place free from vibration, maintenance and inspection.

1.4 This equipment should be installed in a place where there is less dust, oil and gas and metal dust.

1.5 This equipment should be installed in a place where there is no electromagnetic noise interference.

### **2. Equipment installation**

2.1 Place the equipment in the specified location.

2.2 Use a spirit level to adjust the level of the equipment and then tighten the foot cup screws.

2.3 Connect the air intake pipe to the equipment air inlet.

2.4 Connect the power plug to the equipment.

2.5 Grounding requirements: Connect the device to the ground of the power distribution box separately. Do not connect it in series with other devices.

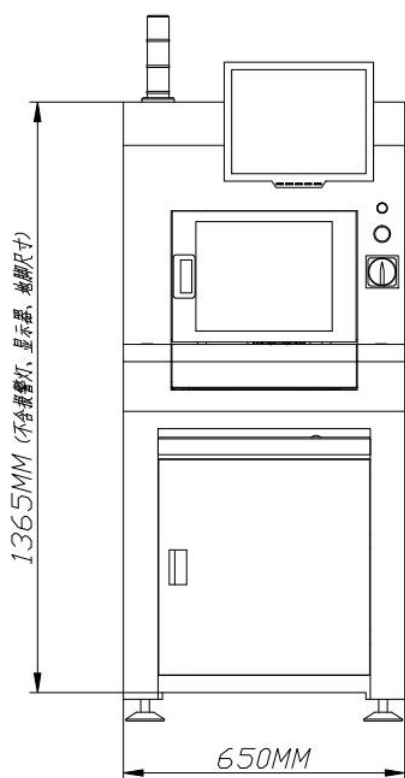
2.6 Check that the upper and lower signal lines are connected properly and that normal communication is possible.

### **3. Power supply, electrical configuration**

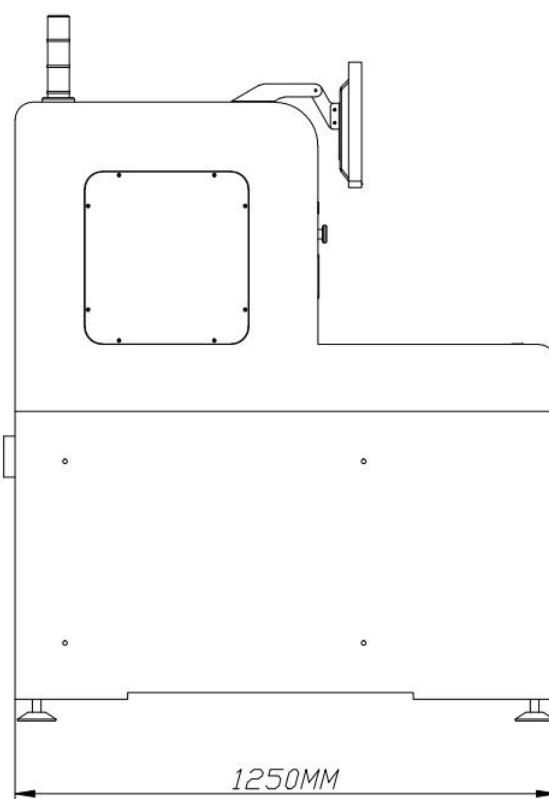
3.1 The standard input of this device is single phase 220V AC.

3.2 The standard pressure of this equipment is 0.3~0.7 MPa.  
Note: The ground wire of the power grid meets the international requirements of the equipment room to ensure good grounding of the equipment casing.

## 五、Machine Size



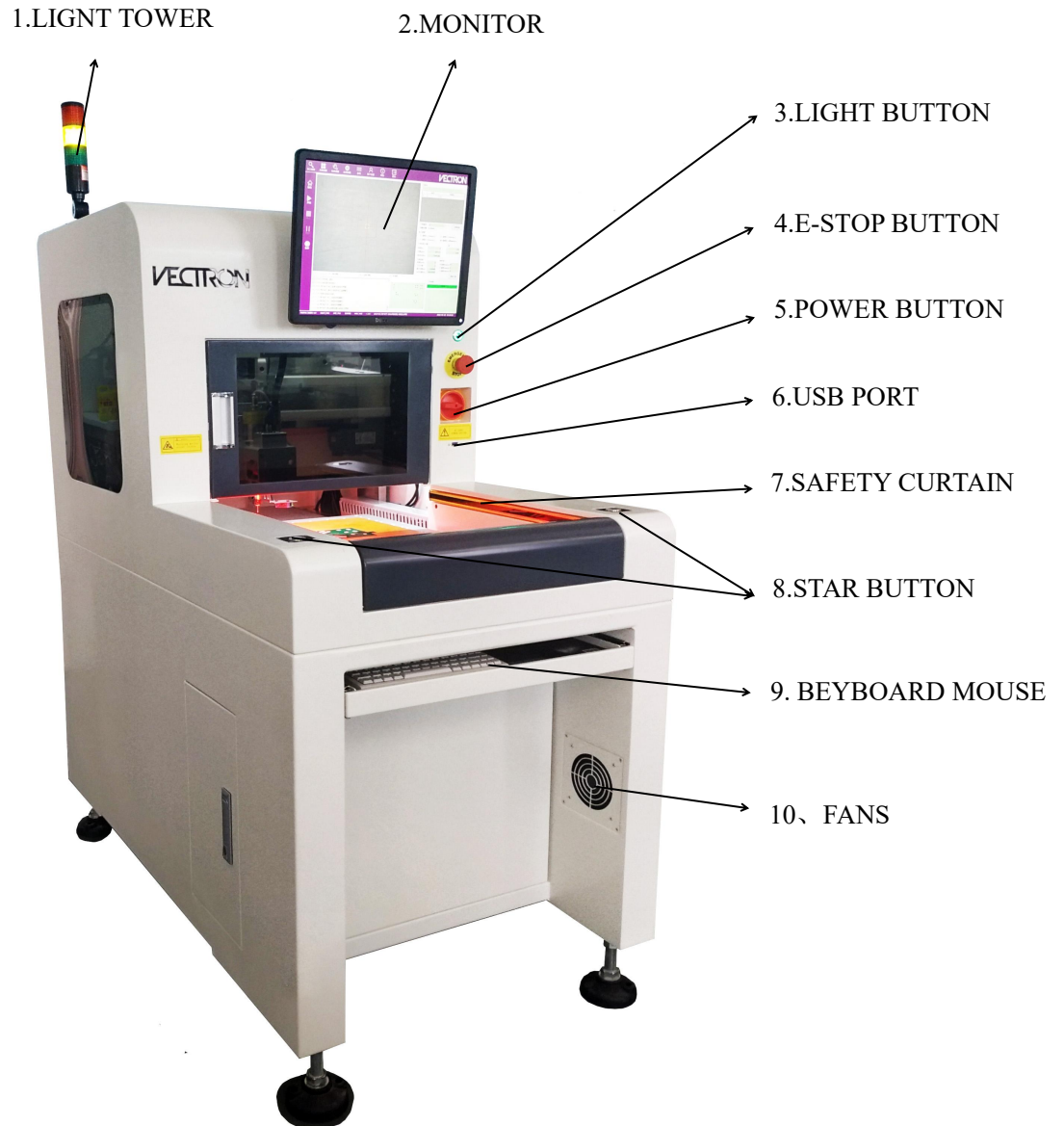
Front view



Side view

## Chapter I 、 Machine Description

### 一、 Machine Appearance Description



#### 1.1 LIGHT TOWER

**RED:** Lights up when the machine is not ready, the emergency stop button is pressed, the safety door is opened, or the fault occurs.

**Yellow:** The machine is normal and lights up while waiting for production.

**Green:** The light is on when the equipment is running normally.

## **1.2 Monitor**

Used for displaying program interface buttons and production status.

## **1.3 The light switch**

Turn on and off the lighting system in the equipment.

## **1.4 E-stop button**

Whenever the button is pressed, the device will stop running. This switch is a self-locking switch. To eliminate it, turn it clockwise.

## **1.5 Power Button**

Turn all power to the device on and off.

## **1.6 USB Port**

Used for connection and communication between industrial computer and external equipment.

## **1.7 Safety curtain**

When the light curtain is touched during the production process, the equipment immediately enters a stop state to prevent an accident.

## **1.8 STAR button**

In the production state, press the two switch buttons at the same time, the device enters the processing and production state.

## **1.9 Keyboard、Mouse**

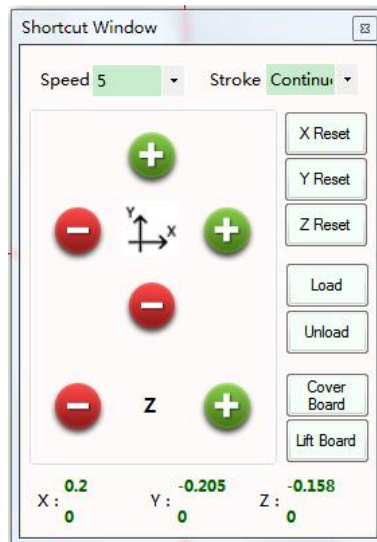
Used to manipulate and input data.

## **1.10 Fans**

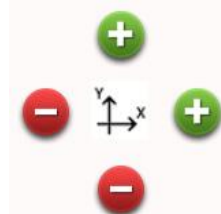
After the main power switch is turned on, the cooling fan will automatically run, mainly for the internal wiring of the device. Cooling of components such as the main unit.

## **二、Keyboard button operation instructions**

Press the keyboard F2 (usually used when setting the program, please familiarize with this part), as shown below;



**1.Each axis move key:** Represents the direction keys for moving the X and Y axes, as shown in the following figure; This function is consistent with pressing the upper, lower, left and right keys of the keyboard;



Represents the direction key of the moving Z axis, as shown in the following figure; Pressing the keyboard "UP" and "DOWN" in the movable state is consistent with this function;

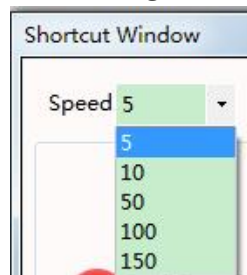


**2. Speed and stroke:** Select "5" position for speed and "Continuous Motion" for stroke, indicating that the current moving speed is 5mm/s, as shown in the figure below;



Speed selectable values, as shown below, (where 5 and 50 are default values,

Its value can be set through the "Advanced Window";

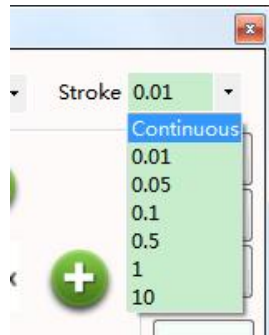


As shown in the figure below, the speed selects the "5" position

and the stroke selects “0.01”, indicating that when  
The distance of the previous movement is 0.01mm;



The selectable value of the stroke, as shown below, (where 0.05, 0.5, 1 are the default Value, other values can be set through the “Advanced Window”);



**3. Status of each axis:** Display real-time coordinate values of each axis;



#### 4. Function key:

(1) X reset: Click the button and the X axis returns to the original position;

(2) Y reset: Click the buttons and the Y axis returns to the original position;

(3) Z reset: Click the button and the Z axis returns to the origin position;

(4) Load: Click the button and the axes return to the loading position (some functions have cover function);

(5) Unload: Click the button and the axes return to the unloading position (some functions have a cover function);

(6) Cover board: Click the button and the axes return to the unloading position (some functions have a cover function);

### 三、 Boot operation:


3.1 Confirm that the device is properly connected to the power and air supply;

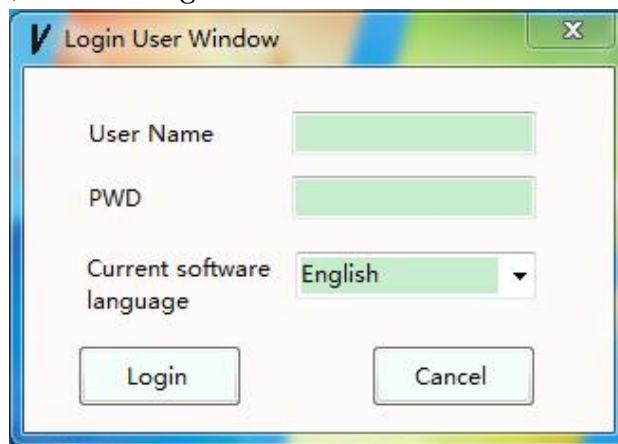
3.2 Turn on the device’s main power switch (rotate to the “ON” state), the indicator lights up, and the industrial master Machine start;

3.3 Press the “lighting switch” button to illuminate the

device lighting system;

3.4 After the equipment industrial computer is started, double-click the Router control software on the windows system

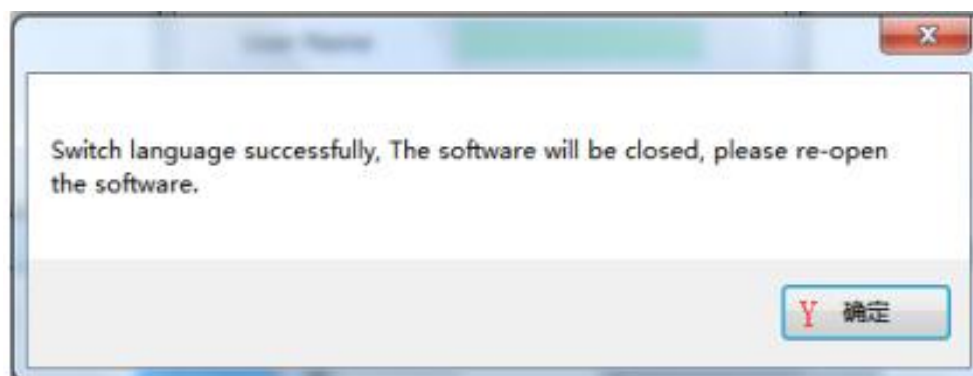
desktop. “”, The login window shown below will pop up;



After entering the username and password (Default username: 123; password: 123)

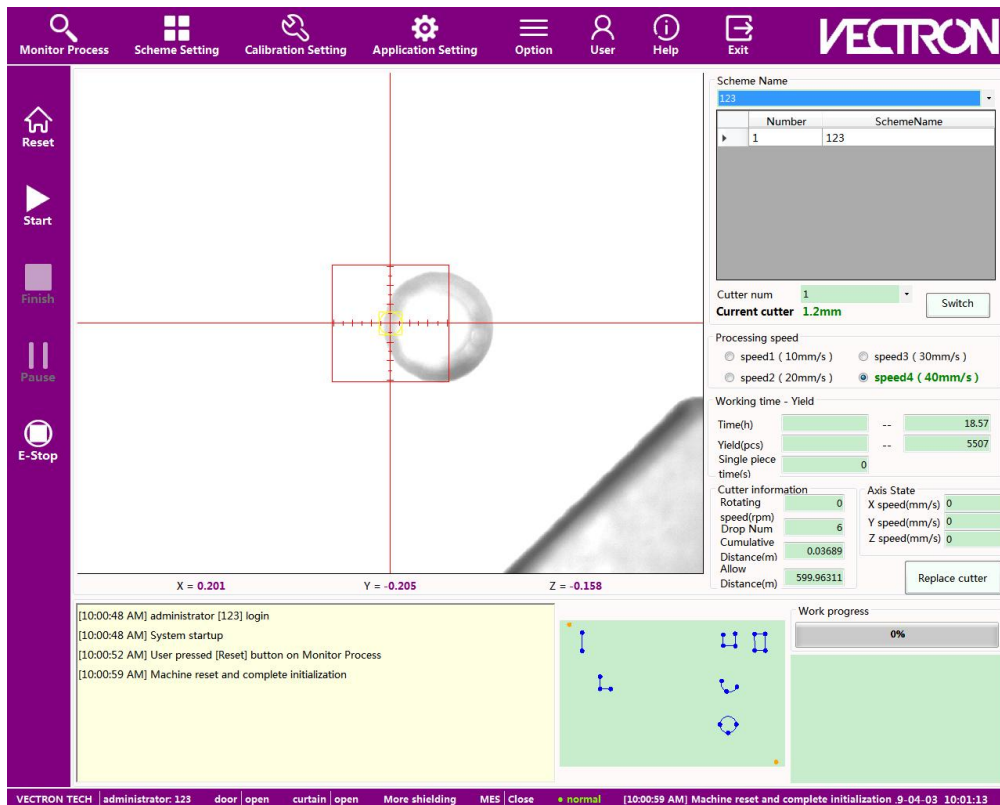
Select the corresponding language ( Chinese and English version);

If you want to switch languages, the window shown below will pop up;



Click “Y”, the logout window will be exited and you need to log in again to switch successfully.


Select “Simplified Chinese” here, click “Login”, enter the extension machine control software master interface. As shown below;

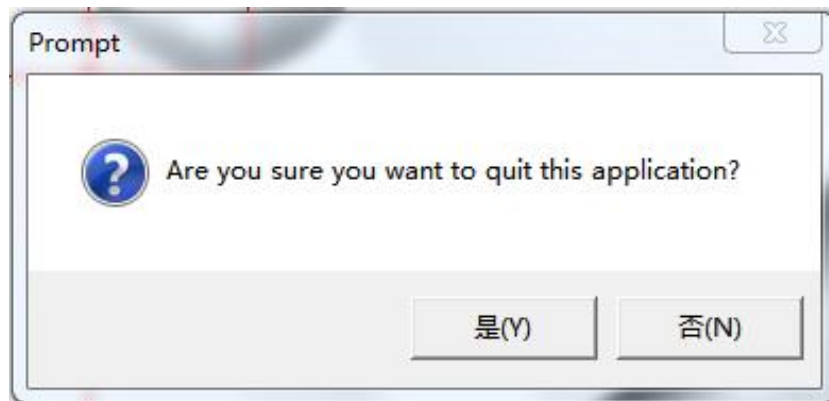


3.5 Click the “Reset” button at the top left of the main interface. After the device reset is completed, it can be operated normally.

#### 四、Shutdown operation

4.1 Ensure that the fully router machine is in production stoppage;

4.2 Click on the top of the main interface “”, Pop up the window shown below;



Click “Yes” to exit the control system;

4.3 Turn off the machine lighting system by pressing the “light switch” button;

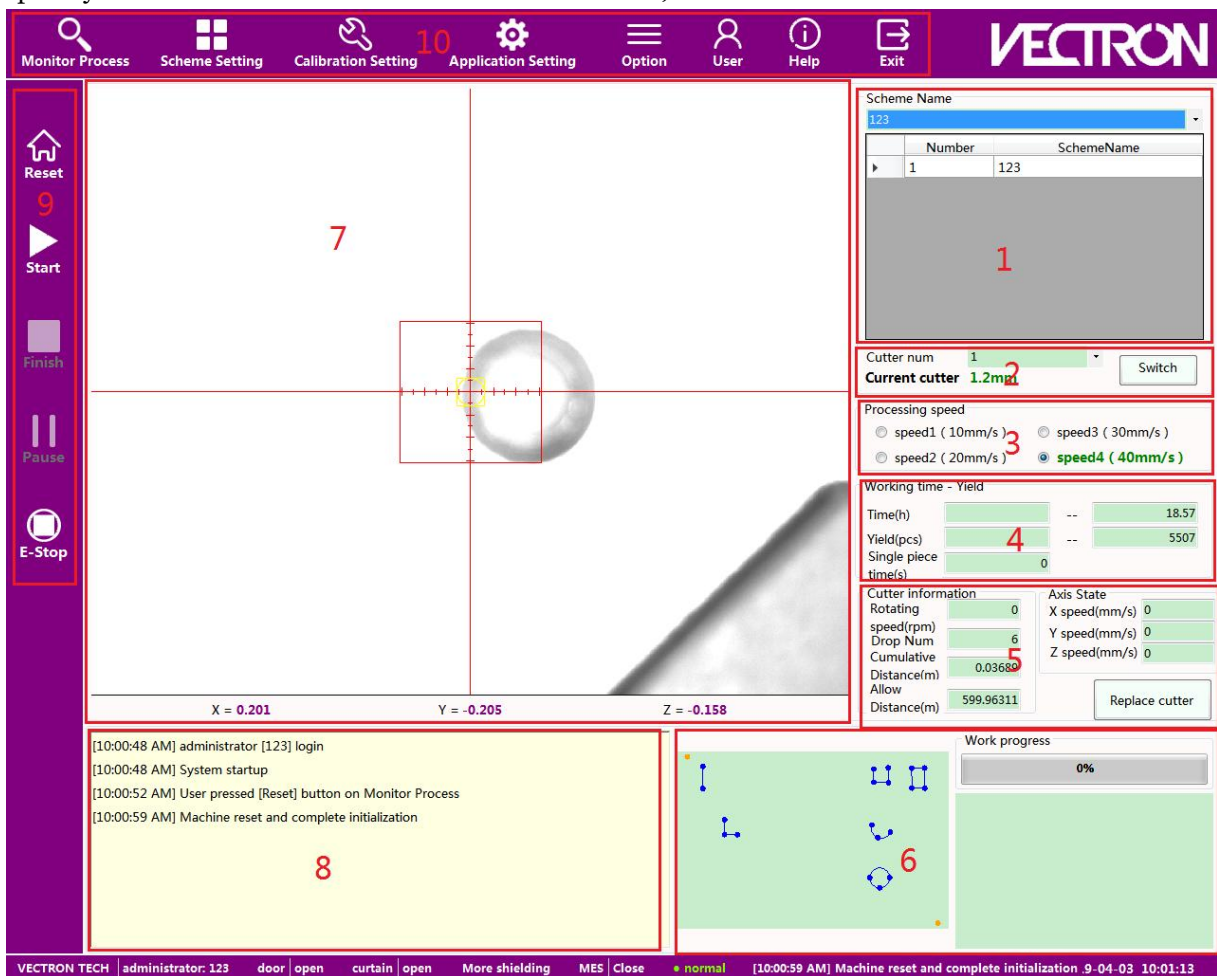
4.4 After the above steps are completed, turn the power switch of the machine (rotate to the "OFF" state).

The shutdown operation is all completed.

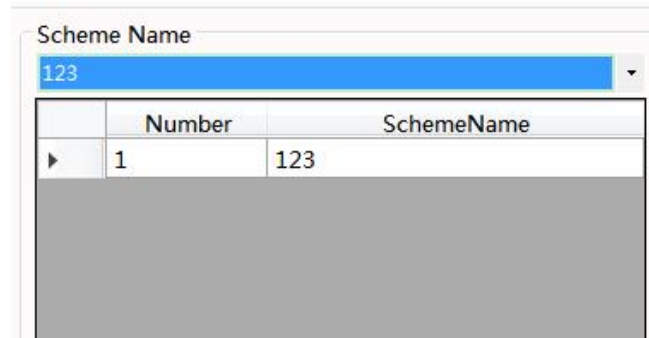
## Chapter II. Router Software Controll Description

### 一、Main Interface Software Fuctions Description

After starting the industrial control host, open the software control system and enter the user name and password. Display the interface shown below;

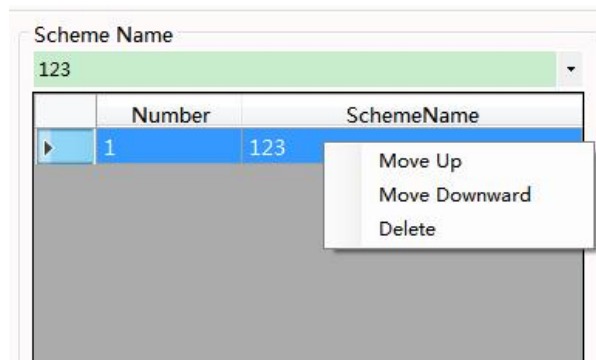


**1.Processing list:** Through the drop-down menu on the right, you can select the solution to be processed, as shown below;



After the processing plan is selected, it will be displayed in the processing list; at this time, move the mouse to a program. At the click of the right mouse button, you can change the processing order of the program or remove the program.

Processing list.



## 2. Tool management

Select the tool required for the current plan. If you need to change, select it through the menu. After choice the tool, click “Transition Now” to switch over;

**3. Processing speed:** Select the speed at the time of cutting (can be set through the advanced window);

## 4. Working time - production

**Time:** Display current processing time and total processing time of the selected program;

**Yield:** Display current processing output and total processing output of selected equipment;

**Single piece time:** Shows the time required to complete a single piece of PCBA board for the selected solution;

on;

**5. Tool informations and axis status:** Monitor the information of the currently used tool and the state of each axis movement; when the current tool life reaches the set allowable value, a pop-up prompt window will pop up, click “Change Tool”, the device will move to the set tool change position;

**6.Processing information:** Display the path information and completion rate of the current plan processing;

**7. Perspective display window:** Real-time display of images captured by the camera, providing viewing angle information when editing the cutting path;

**8. Log display window:** Real-time display of equipment operating status, alarm information and recording operator operation process;

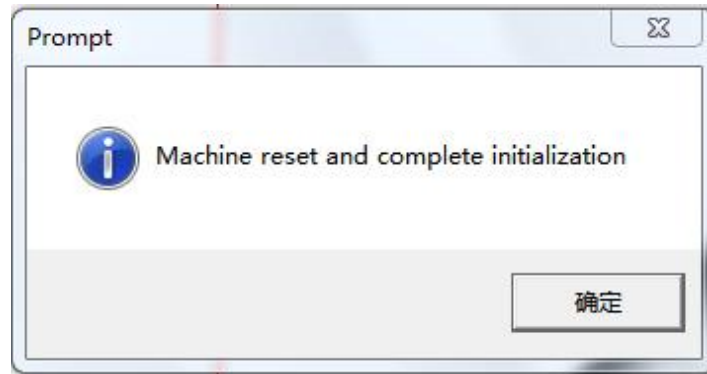
#### **9. Equipment operation control:**

**Reset:** After opening the system software, you must first perform a reset action, otherwise you will be in production and production. The operation of the case setting, etc., the system pops up the window shown in the figure below;



After the reset is successful, the window shown in the following

figure will be played;



**Start:** Select the plan to be produced, click "Start", you can produce normally;

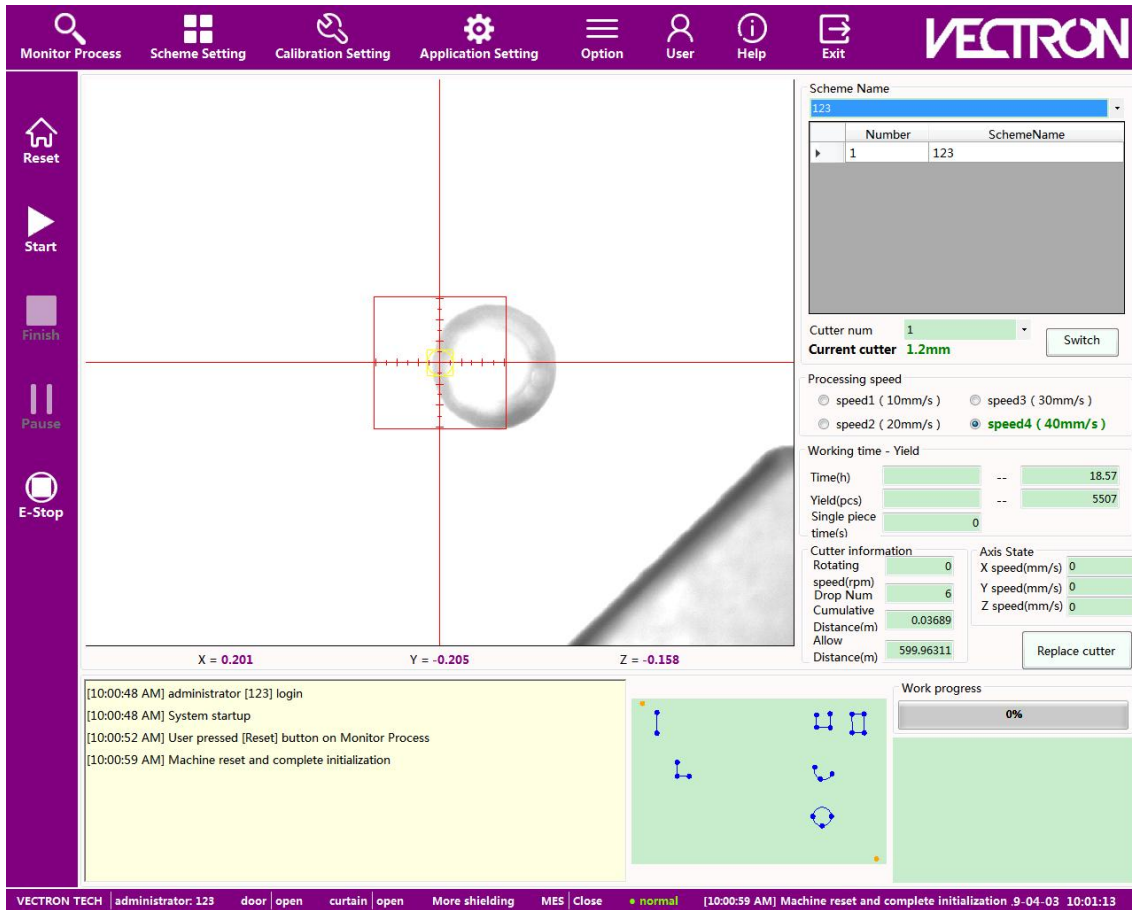
**Stop:** The device is in production, click "Stop", the device needs to complete all the current program Stop after cutting the path;

**Pause:** The device is in production, click "Pause", the device will be stopped immediately; To restore, click "Continue" and the device restarts cutting; (if the device is working To cut, click "Pause", the current position will be cut before suspending);

**E-Stop:** When the device is running, click "Emergency Stop" and the device will stop immediately; (If you need to continue production, you need to click "Reset", the reset will be successful).

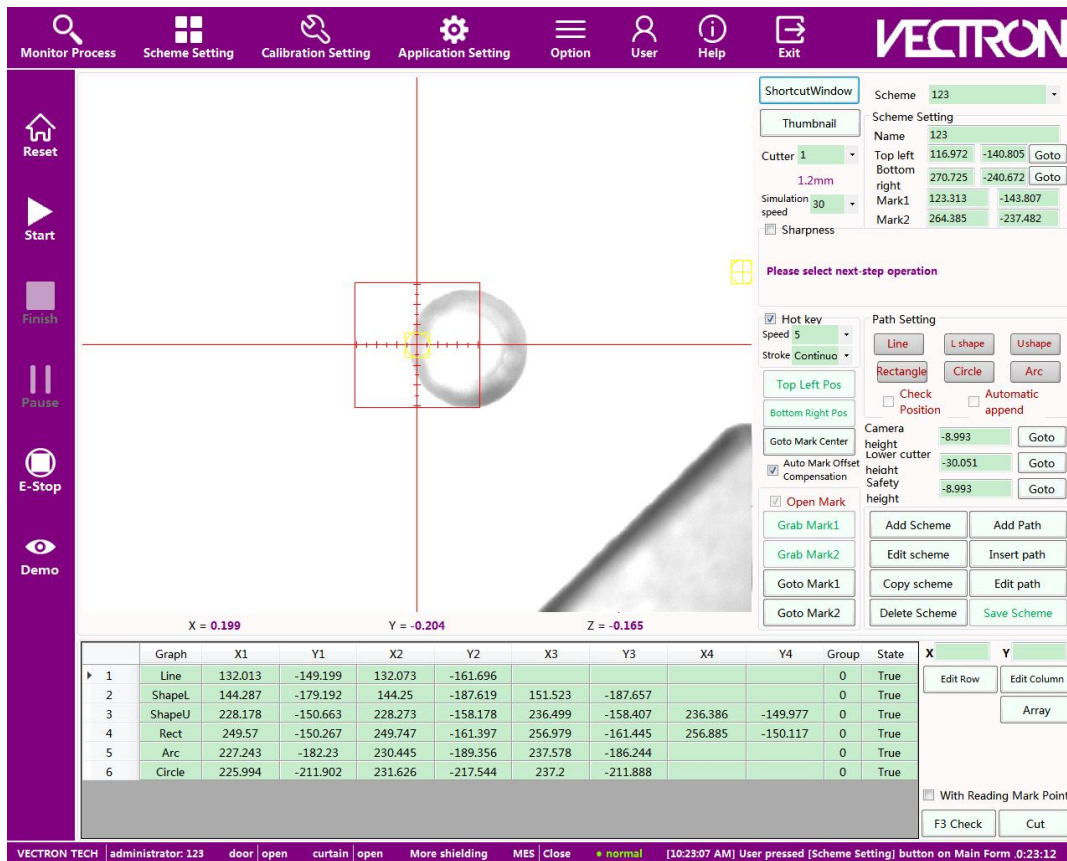
## 10. Setting window

10.1 Processing monitoring: Click "Processing Monitoring", as shown in the figure below;

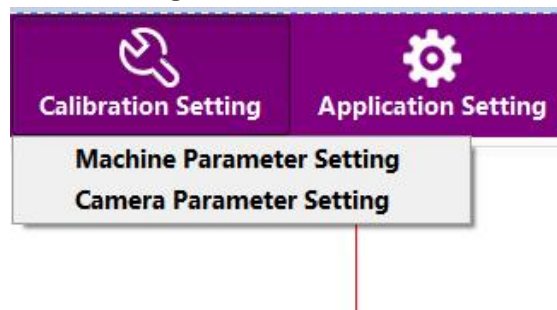


After the device is successfully reset, this interface is the default interface, which can select the program scheme and monitor the operation of each component of the device.

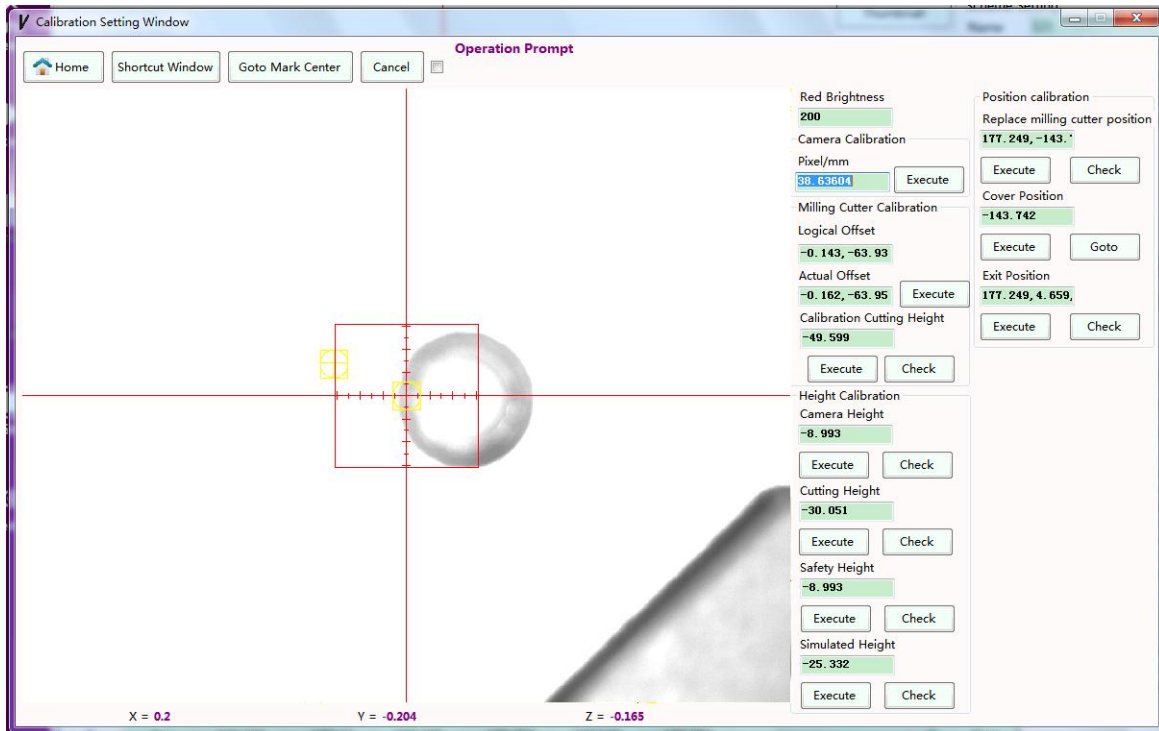
10.2 Scheme setting: Clicked “Scheme setting”, The interface shown below is displayed; for this part, the following sections will be described in detail.



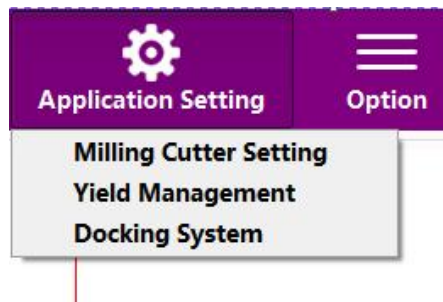
10.3 Calibration setting: Clicked “Calibration setting”, as shown in the figure below;



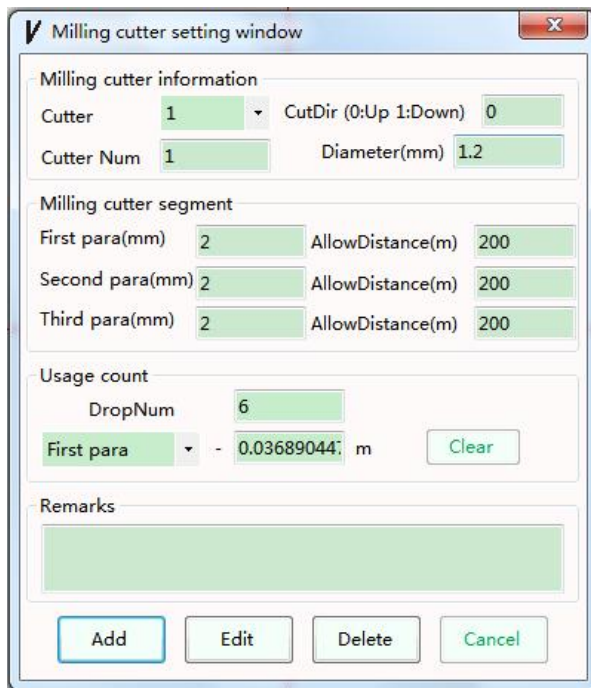
Clicked “Machine parameter setting”, as shown in the figure below; about the calibration setting will be introduced after;



10.4 Application Setting: Clicked “Applications Setting”, as shown in the figure below;

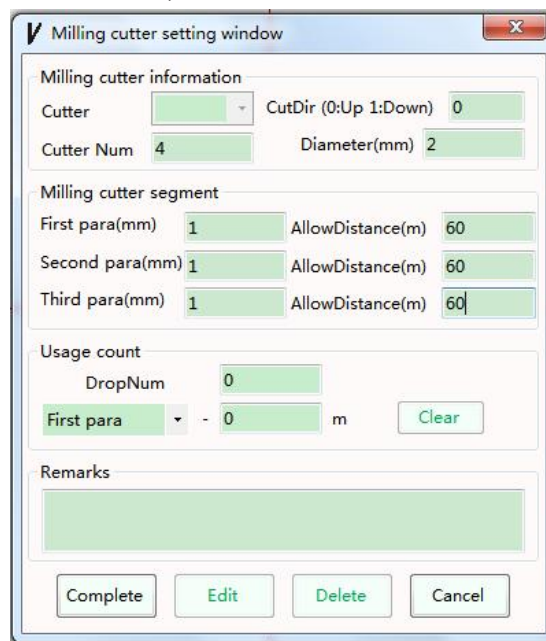


(1) Clicked “Milling cutter setting”, as shown in the figure below;

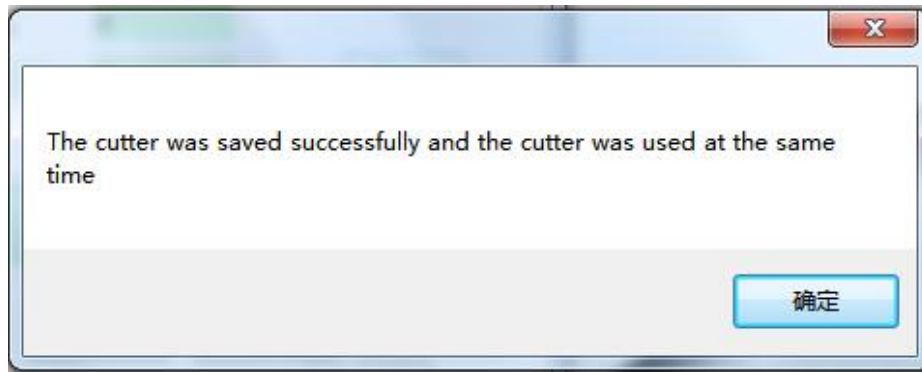


(2)

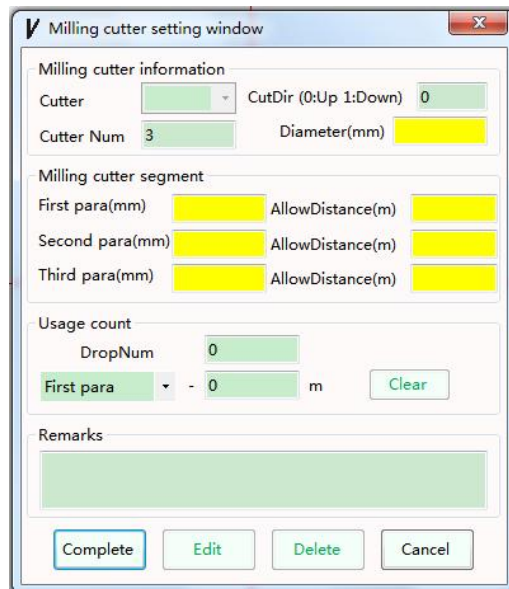
①Clicked “Add”, as shown in the figure below;



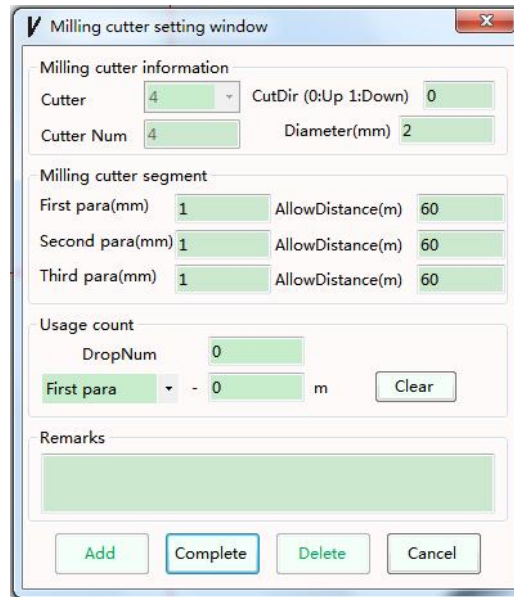
Setting “Cutter No.”、“Cutter Diameter”、“Cutter segment” informations, clicked “complete”, if all of the information are correct, you can see as shown in the figure below ;



If all of the information are incorrect, you can see as shown In the figure below, must be fill up the yellow area;



②Choice the Cutter tool, Clicked “Edit” , as shown in the figure below, you can modify this cutter tool information;



③Choice you need delete cutter tool,Clicked “Delete” , can delete all of the information of this cutter tool item;

(2) Clicked “Setting Yield Managment” , as shown in the figure blown;



Total Time(h): Machine working time (including all of the project total productions time) ;

Total Yield: Machine production total yield (including all Of the project total yield) ;

Time(h): Current project production time;

Preset Yield: After setting the quantity to be produced, the equipment will automatically stop production.;

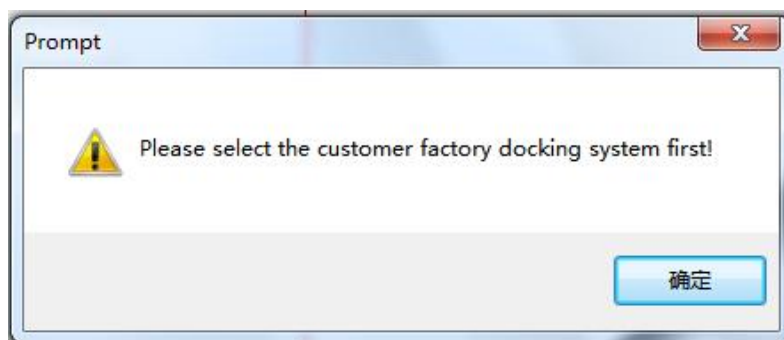
Actual Yield: Actual production of current production

equipment;

(About the “Preset Yield” parameter can modify but other parameter can not , just clear only;

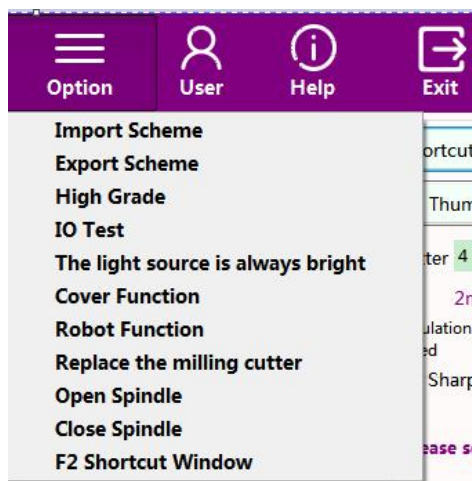
If need to clear,clicked “Clear” and save is ok.

(3) Clicked “Docking system” , as shown in the figure below;

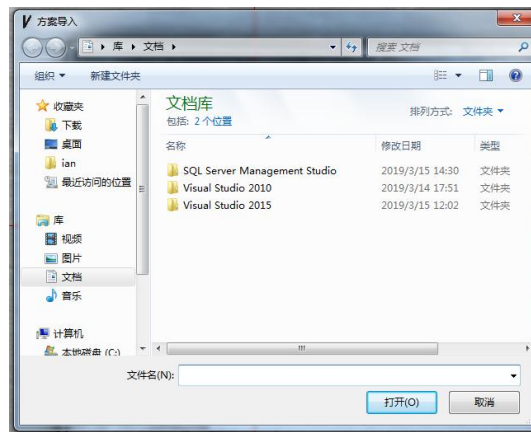


This functions is customize,use it need contact with us;

10.5 Option: Clicked “Option” , As shown in the figure below;

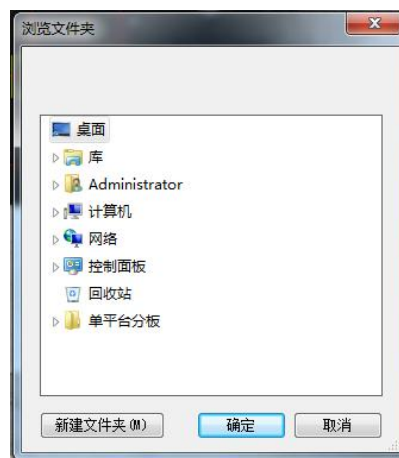


(1) Clicked “Import Scheme” , as shown in the figure below;



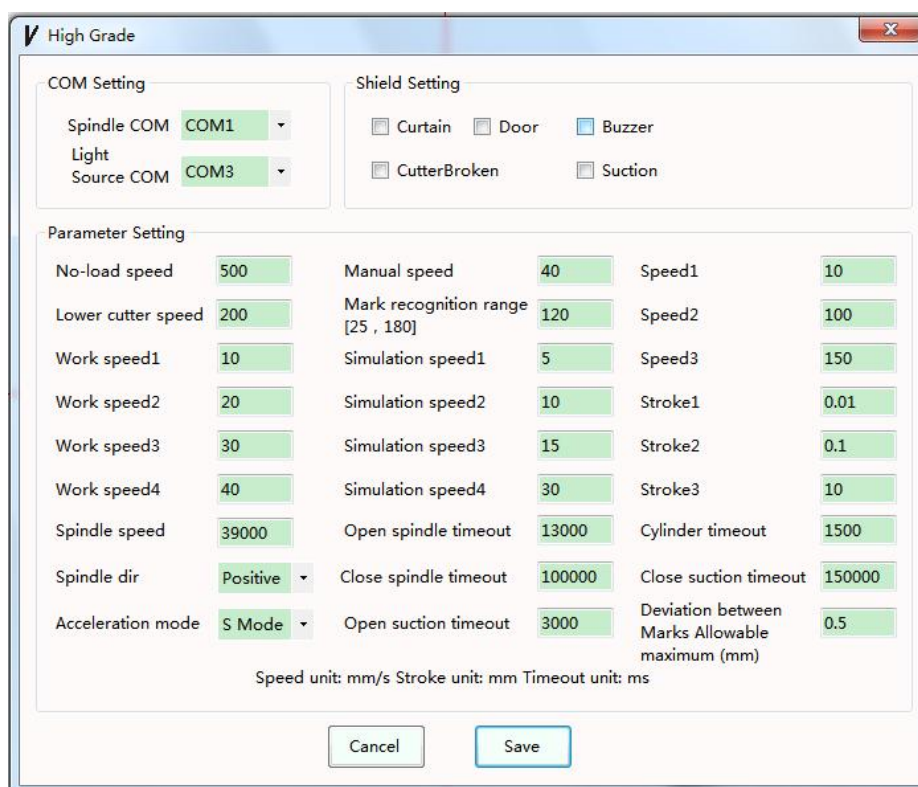
From the document choice import scheme (save scheme before) , Click “Open” ; This function convenience import or export scheme from one machine to other machine for production, reduce the edit project steps and times.

(2) Clicked “Export Scheme” , as shown in the figure below;



Ensure the document save location, clicked “yes” is ok ; this function convenience export scheme from one machine to other machine for production.

(3) Clicked “High Grade” , as shown in the figure below;



COM setting: including “ spindle COM” 、 “light source COM” , use for connect signal only, can not modify;

Shield Setting: Clicked option, this function can't use, and the color change to gray;

Parameter Setting: Setting parameters of the machine;

(1)No-load speed: Machine standby, without production X,Y axis moving speed (mm/s) ;

(2)Lower cutter speed: Machine standby, without productions Z axis moving speed (mm/s) ;

(3)work speed: Machine working status, X,Y axis moving speed (mm/s) ;

(4)Spindle speed: Machine working status the spindle working speed, Default setting “39000” (r/min) ;

(5) Spindle Direction: spindle working direction, D

efault setting “clockwise” ;

(6) Acceleration model: Motor working acceleration model, default setting “S model” ;

(7) Manual speed: setting scheme, clicked “cutting” , X、Y axis moving speed (: mm/s) ;

(8) Mark Recognition range: Set the search area of the search mark, Unit is “pixel”;

(9) Simulation speed: Select “Demo Mode” in the scheme settings, X、Y axis simulation cutting moving speed (m/s) ;

(10) Open spindle timeout: when machine production, with the setting time spindle unable to start, the machine will Alarm (ms) ;

(11) Close spindle timeout: with setting time, without received the production signal, spindle auto closed (ms) ;

(12) Open suction timeout: setting the suction start of waiting time, within this time machine won't for production (ms) ;

(13) Speed: Set shortcut window, each axis moving speed (ms) ;

(15) Stroke: Set shortcut window, each axis single steps moving distance (mm) ;

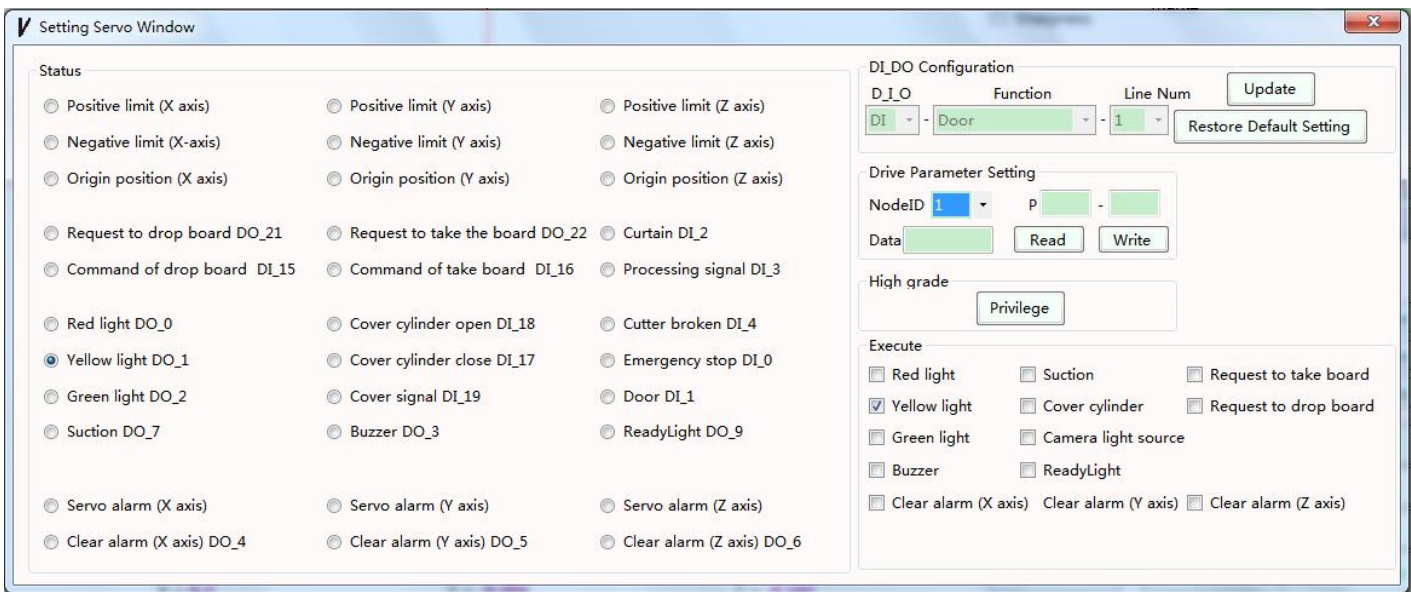
(16) Cylinder timeout: within setting time cylinder not working, machine will be alarm (mm) ;

(17) Close suction timeout: within setting time, mac

hine without received the production signal, suction will be auto closed (ms) ;

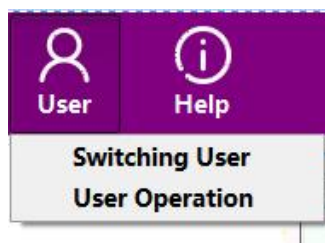
(18)Mark deviation allows maximum: when marking mark,if Mark, If the deviation exceeds the set value, machine will be alarm (mm) ;

(4) Clicked “High Grade” , as shown in the figure below;

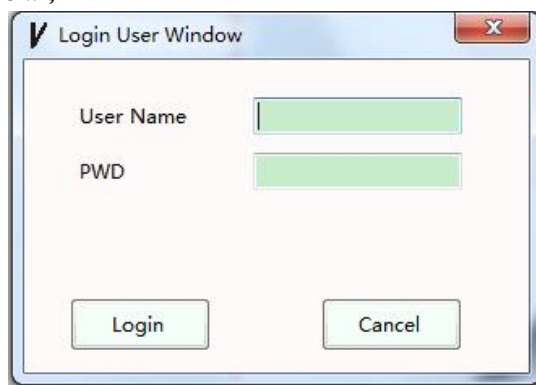


Drive board parameter:This interface shows the status of each axis, the limit switch positive, the limit switch negative, the origin, the switch, the input IO, the output IO, etc.When the general equipment is faulty, in order to facilitate the inspection of the cause of the fault; if the IO signal needs to be changed, please contact our staff, and there is no detailed explanation here.

10.6 User setting: clicked “User” , as shown in the figure below;

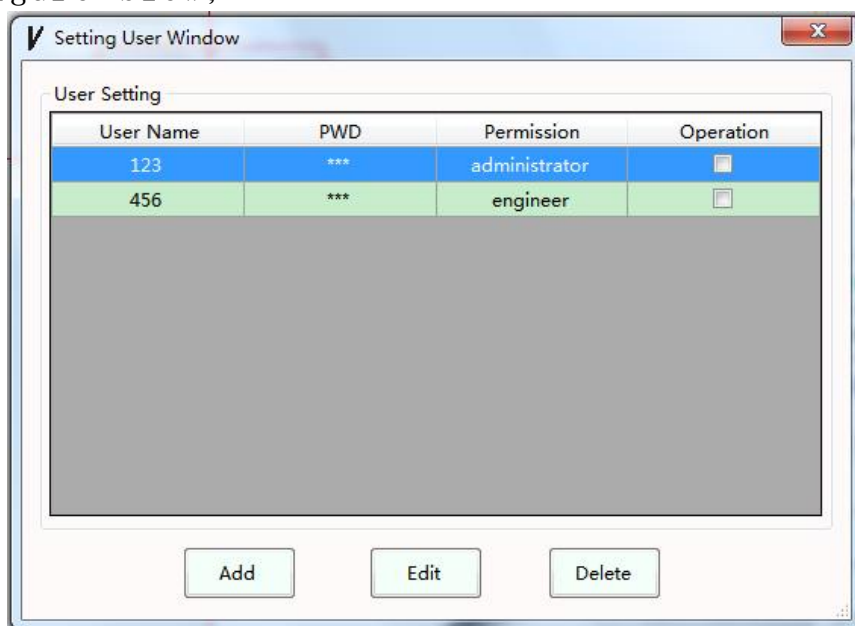


(1) Switching User: Click this function, as shown in the figure below;



Enter user name and password login only.

(2) User Operation: Clicked this function, as shown in the figure below;



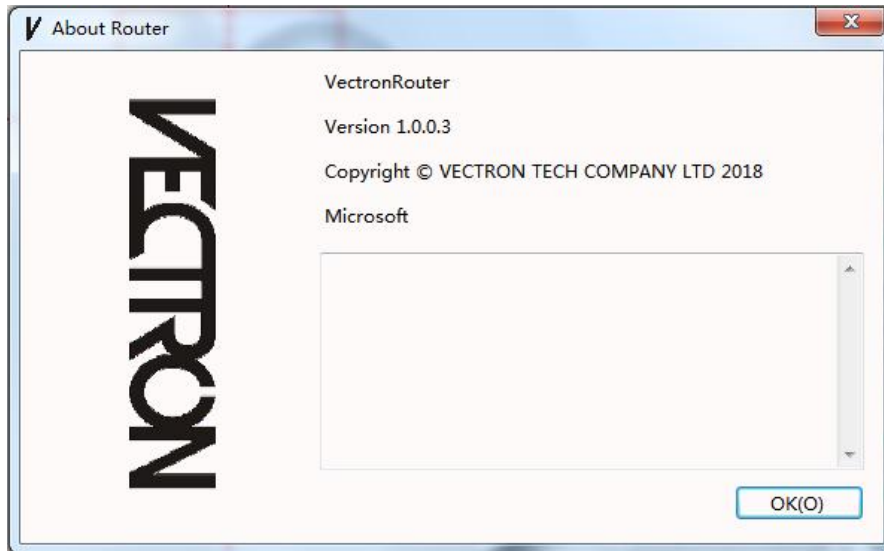
This window can add different level account, such as: manager、engineer、operator, etc.

10.7 Help: clicked “Help”, as shown in the figure blown;



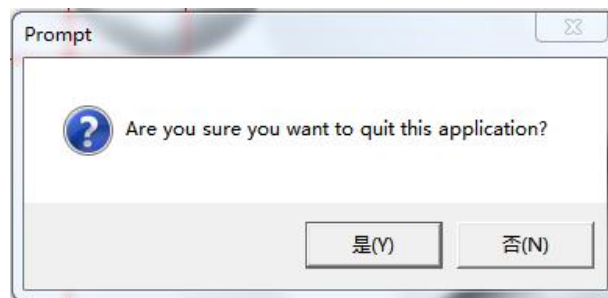
(1) Registered Product: Registered production and update software only.

(2) About Router: Clicked this function, as shown in the figure blown;



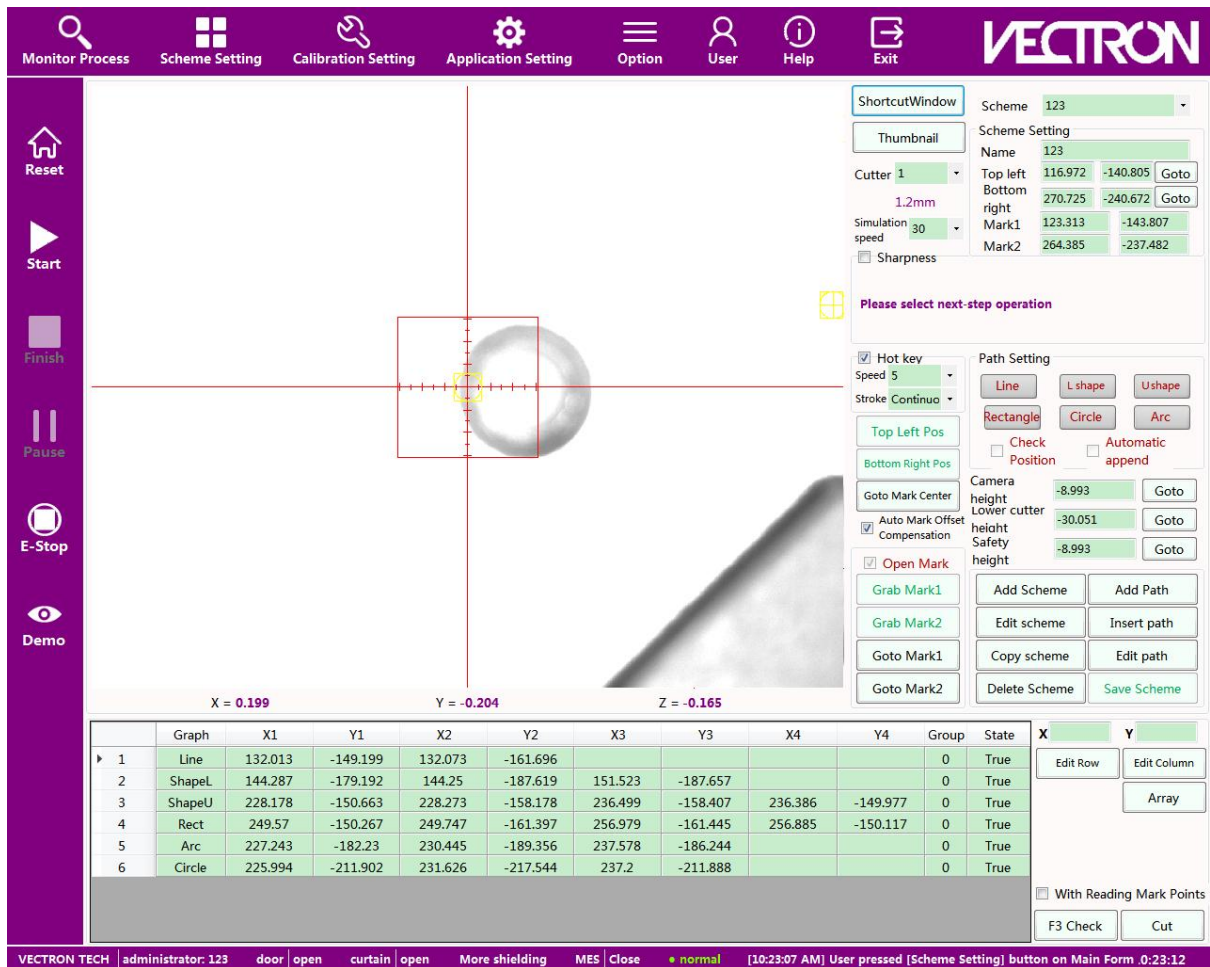
Software version and company informations.

10.8 Exit: Clicked “Exit”, as shown in the figure blown;



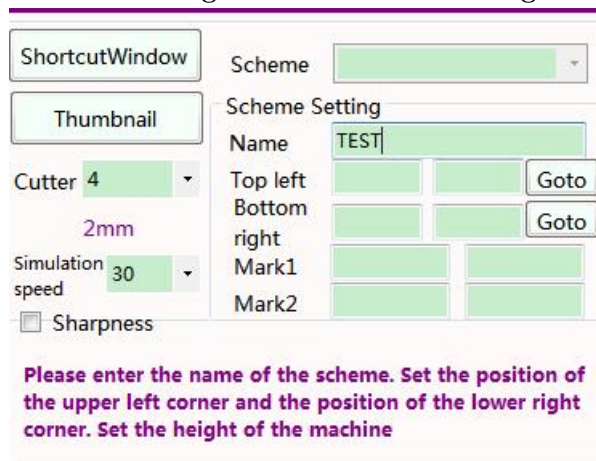
Clicked “Y”, Exit system.

## 二、Project setting

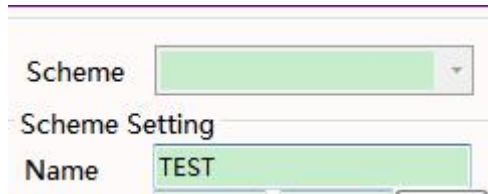


Put the PCBA on the table, add a new scheme

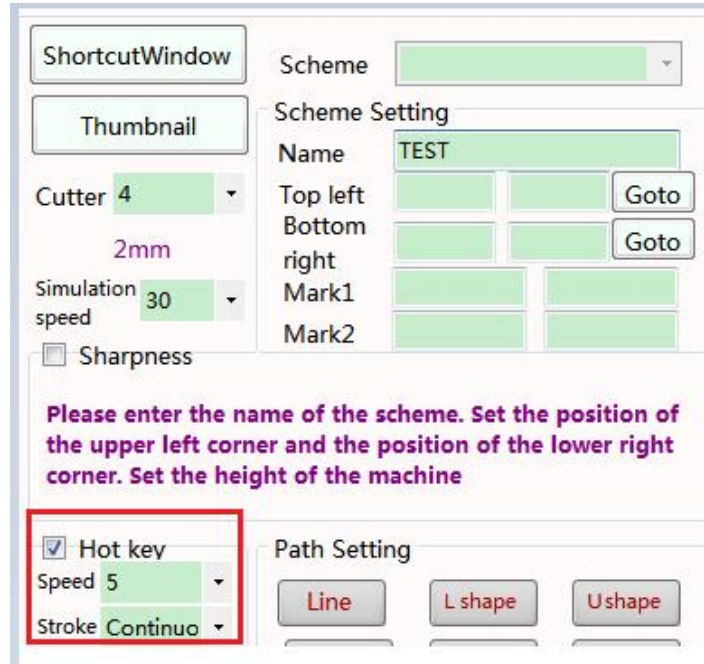
(1) “Add Scheme”, according to the interface guide, as shown With red circle guide in the figure below;



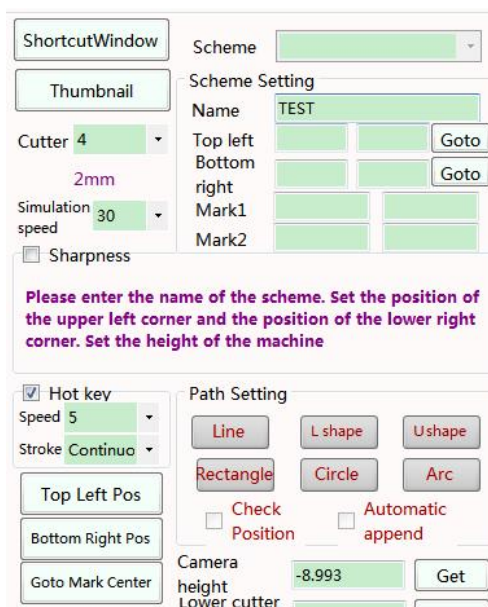
Within interface top of the right corner, input scheme name, as shown in the figure below;



Clicked top of the right corner within interface “Shortcut window” ; or click red circle as shown in the figure below hot key,press the keyboard direction key;



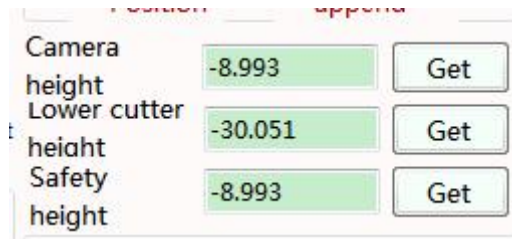
Moving the camera cross to the upper left corner of the PBCA, Clicked “Top left Pos ” ; and then moved to button right pos, Clicked “button right pos” , as shown in the figure below; Clicked “Go to” , Check the position;



As shown red circle in the figure below: Clicked “Sharpness”, the prompt language will change to a series of numbers that will change. as shown red circle in the figure below;

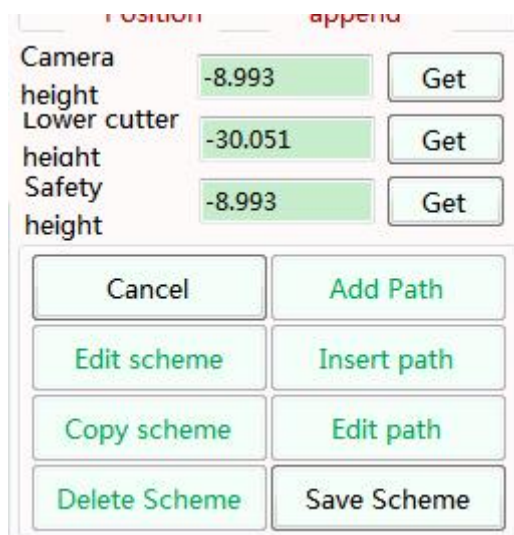


Through the shortcut window, Moved Z axis up and down, (Because the sharpness is sensitive, Move to near maximum, Turn the “stroke” down a bit and slowly move the Z axis), When this number is the maximum, moved to “Camera Height” setting, Clicked “Get”;

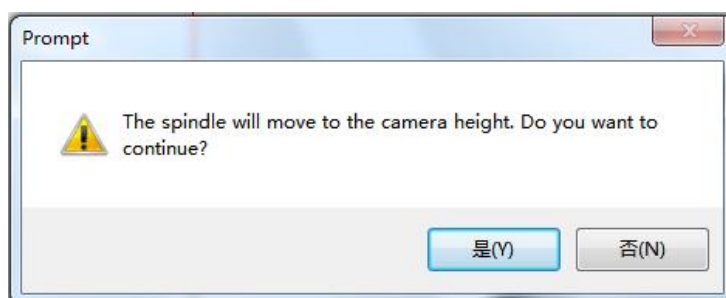


As the same way, setting “Lower cutter height” (Lower Cutter height means when the machine working, the router bit Cutting max position); as the same way, setting “Safety height” (Safety height means when the machine working, The position where the milling cutter is raised must be higher than the highest position of any component on the PCBA board; when open “Broken knife sensor”, “Safety height” Need to correspond to the height of the sensor);

After the above steps are set, , Clicked finish “SAVE”, as shown in the figure below;



Clicked “Camera height setting” clicked “check” setting parameter (Note: Click “check”, the system will display remind window, as shown in the figure below; parameter is correct, click “Y”, Z axis will moved to the height value before setting;

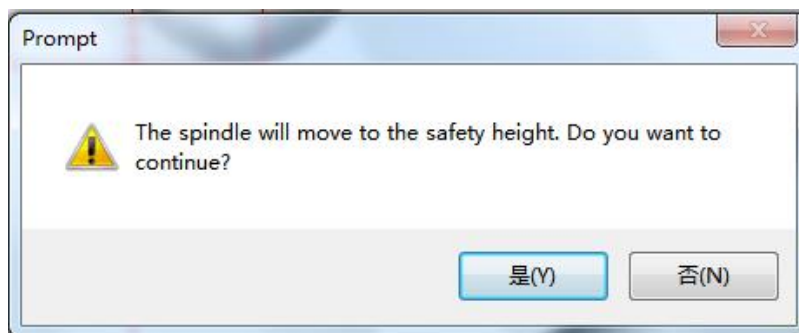


Clicked “Lower cutter height” Click “check” setting parameter (Note: Click “check”, the system will display remind window, as shown in the figure below; parameter is correct, click “Y”, Z axis will moved to the height value before setting);



Clicked “Safety height setting” Clicked “Check”

setting parameter(Note:Click“Check”,the system will display remind window, as shown in the figure below; parameter is correct,click“Y”,Z axis will moved to the height value before setting) ;

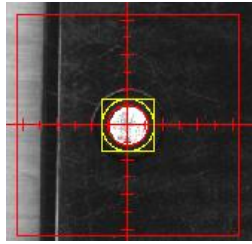


(2) “Edit Scheme” , can modify all of the setting parameters; if need to open check Mark function, Clicked “Open Mark” , as shown in the figure below;



Moved camera cross to Mark1, Clicked “Goto Mark Center” , Camera search “Mark1” , as shown in the figure below, (if the camera search the Mark,will display red circle; or need

to setting “Calibration setting” within “Camera setting window” adjust Mark parameter.



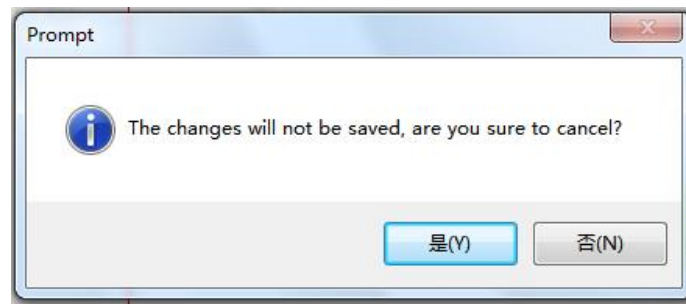
Click again “Grab Mark1”, Remind area will be display “Grab Mark 1 Finish” ; as the same way, setting MARK2; then check “Goto Mark1” and “Goto Mark2”, check the camera Grab Mark is it stable, if it not stable need repeat adjust Mark parameter; Note: Open Mark after, “Automatic Mark Offset Compensation feature can also be enabled.

If “Auto Mark Offset Compensation” is not clicked, the system does not make “Mark” during the production process. Offset compensation action;

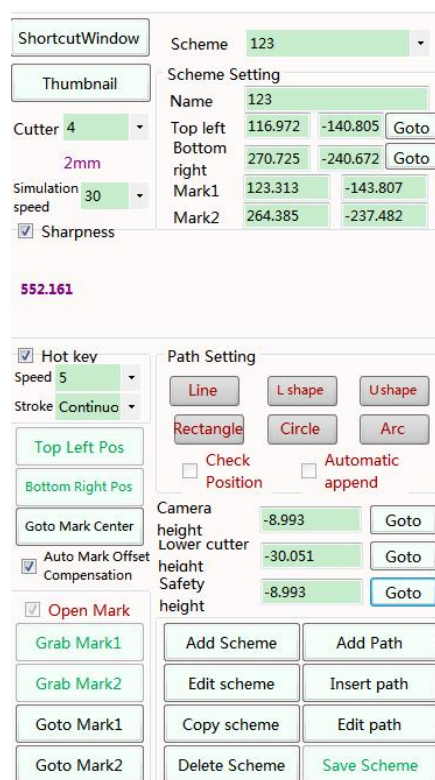
If “Auto Mark offset compensation” is selected, during the production process, the system offsets the path according to the obtained Mark deviation value to prevent the components in the PCBA from being cut.

After “Auto Mark Offset Compensation” is turned on, if you need to modify the Mark information, you can't click twice or more when “Grab Mark2”, otherwise the system will prompt to “grab Mark1” again; After confirming that the modified value is correct, click “Save Scheme” to complete the modification operation;

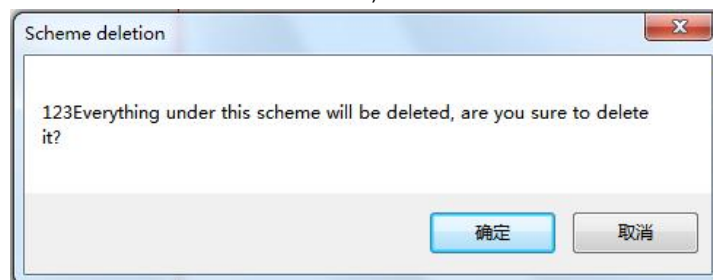
If clicked cancel, as show in the figure below;



(3) “Copy Scheme”, enter new scheme name and save scheme, as show in the figure below; through the copy scheme all of the parameter same except the scheme name;



(4) “Delete scheme”, the system will delete the current scheme, as shown in the figure below. Click “OK”, the current scheme will be deleted;



(5) “Add Path”, Select the line shape to cut in the path settings (before setting the path, Select the

corresponding tool as needed);

Straight Line: Press the "Enter" key in the front and back positions to be cut to confirm the two points.

L Shape: Press "Enter" at the front, middle, and back positions to be cut to confirm the three points.

U Shape: Press "Enter" at the top, bottom, left, and right positions to be cut to confirm the four points (the U shape cuts only three sides).

Rectangle Shape: Press "Enter" at the top, bottom, left, and right positions to be cut to confirm the four points (the rectangle cuts four sides).

Circle Shape: Press "Enter" at the front, middle, and back positions to be cut to confirm three points (the system will automatically determine the unique circle based on the three-point position).

Arc Shape: Press "Enter" at the front, middle, and back positions to be cut to confirm three points (the system will automatically determine the unique arc based on the three-point position).

The path is successfully edited, and "True" is displayed in the status bar, otherwise "False" is displayed;

As shown in the figure below;

Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State
Line	133.656	-146.806	133.073	-159.03					0	True

( True )

Line	250.583	-229.816							0	False
------	---------	----------	--	--	--	--	--	--	---	-------

( False )

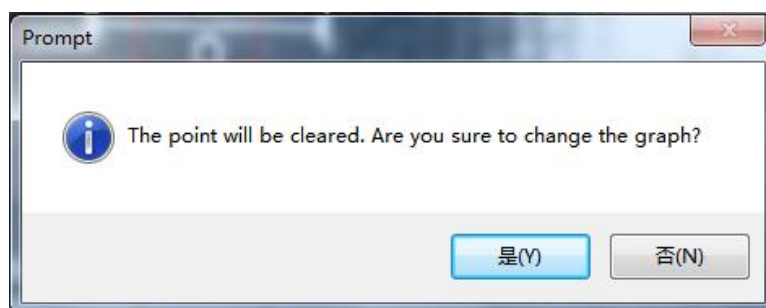
When setting the path, check "Automatically append",

it will automatically increase the current path of the same type after the current path is set, as shown in the figure below;



	Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State
1	Line	133.656	-146.806	133.073	-159.03					0	True
2	Line									0	False

When setting the path, if you need to modify a path, select the path to be modified, and then click the line to be switched, as shown in the figure below;



Clicked “Y” .

After the path is set, click Save Path. If the line status is False, the system does not save the path and saves only the path with the status “True”.

In the non-modified path state, select a line of the path, click the right mouse button, click “Delete”, the path may be deleted, as shown in the figure below;

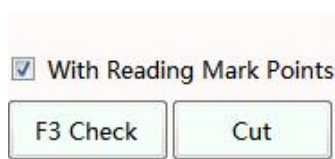
	Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State
1	Line	133.656	-146.806	133.073	-159.03					0	True
2	Delete		-176.653	144.977	-185.079	152.249	-185.194			0	True
3	ShapeU	229.288	-149.006	229.304	-156.521	237.527	-156.837	237.502	-148.406	0	True

To check if a cutting point is edited correctly, just select the coordinates of the point, click “F3 View” or press the keyboard “F3”, the camera cross cursor will move to

the point position;

	Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State	X=145.102	Y=-176.653
1	Line	133.656	-146.806	133.073	-159.03					0	True		
2	ShapeL	145.102	-176.653	144.977	-185.079	152.249	-185.194			0	True	Edit Row	Edit Column
3	ShapeU	229.288	-149.006	229.304	-156.521	237.527	-156.837	237.502	-148.406	0	True	Array	
4	Rect	250.683	-148.834	250.742	-159.965	257.973	-160.089	257.999	-148.761	0	True		
5	Arc	228.021	-180.561	231.148	-187.72	238.314	-184.683			0	True		
6	Circle	226.461	-210.218	232.034	-215.918	237.667	-210.322			0	True		

If you check "With Mark point", the camera will first take Mark and then move to that point;

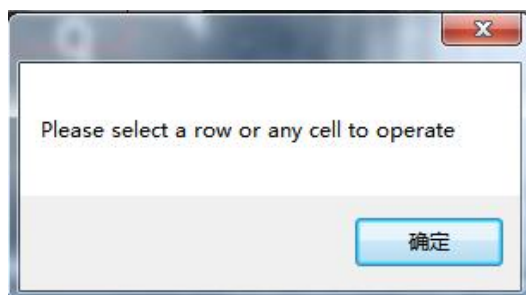


If you click "cut" in the above figure, the cutter will cut according to the set lower knife height (this function should be used with caution);

(6) "Insert path", insert a new path above the selected path; otherwise, the prompt box shown below will pop up;



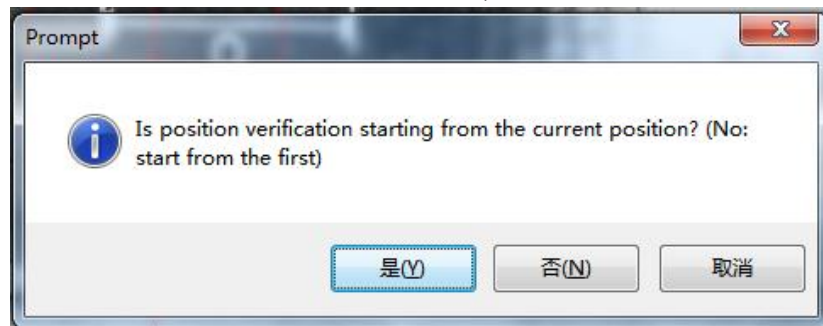
(7) "Modify path", the path that may be set is used for position and line modification; to use these functions, you need to select a point coordinate or a line; otherwise, the prompt box shown below will pop up.;



Enter the path modification interface, select any point coordinate, click “F3 check”, move the camera cross cursor to the position, move the X and Y axes, press “Enter” to correct the point; or select For any point coordinates, check “Position Check” as shown below;



Press the “G” key on the keyboard, and the system will pop up the prompt box as shown in the figure below;



Click “Yes” and the camera cross cursor will move to the coordinate position of the selected cutting point;

Click “No” and the camera cross cursor will move to the coordinates of the first cut point of the program position;

Each time the “G” key is pressed, the camera cross cursor will automatically move to the next cutting point position; when moving to the last cutting point position of the current plan, the camera cross cursor will not automatically switch;

In the modified path state, select a line of the path and click the right mouse button to display the following figure;

	Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State
1	Move Up		-146.806	133.073	-159.03					0	True
2	Move Downward		-176.653	144.977	-185.079	152.249	-185.194			0	True
3	Enable		-149.006	229.304	-156.521	237.527	-156.837	237.502	-148.406	0	True
4	Disable		-148.834	250.742	-159.965	257.973	-160.089	257.999	-148.761	0	True
5	Arc	228.021	-180.561	231.148	-187.72	238.314	-184.683			0	True
6	Circle	226.461	-210.218	232.034	-215.918	237.667	-210.322			0	True

- ① Move up: the selected line path will move up one line;
- ② Move down: the selected line path will move down one line;
- ③ Enabled: disabled path re-enabled;
- ④ Disabled: Checking the line path will disable cutting and will be grayed out;

(8) "Line editing", you can modify the coordinate value of a selected line path, as shown below;

**Note: Adding "=" in front of the number means replacing the original value. If not, adding or subtracting the original value according to the positive and negative numbers entered!**

	Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State
1	Line	133.656	-146.806	133.073	-159.03					0	True
2	ShapeL	145.102	-176.653	144.977	-185.079	152.249	-185.194			0	True
3	ShapeU	229.288	-149.006	229.304	-156.521	237.527	-156.837	237.502	-148.406	0	True
4	Rect	250.683	-148.834	250.742	-159.965	257.973	-160.089	257.999	-148.761	0	True
5	Arc	228.021	-180.561	231.148	-187.72	238.314	-184.683			0	True
6	Circle	226.461	-210.218	232.034	-215.918	237.667	-210.322			0	True

(9) "Column editing", you can modify the coordinate value of a selected column path, as shown in the following figure;

**Note: Adding "=" in front of the number means replacing the original value. If not, adding or subtracting the original value according to the positive and negative numbers entered!**

	Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State
1	Line	133.656	-146.806	133.073	-159.03					0	True
2	ShapeL	145.102	-176.653	144.977	-185.079	152.249	-185.194			0	True
3	ShapeU	229.288	-149.006	229.304	-156.521	237.527	-156.837	237.502	-148.406	0	True
4	Rect	250.683	-148.834	250.742	-159.965	257.973	-160.089	257.999	-148.761	0	True
5	Arc	228.021	-180.561	231.148	-187.72	238.314	-184.683			0	True
6	Circle	226.461	-210.218	232.034	-215.918	237.667	-210.322			0	True

(1)

	Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State
1	Line	133.656	-146.806	133.073	-159.03					0	True
2	ShapeL	145.102	-176.653	144.977	-185.079	152.249	-185.194			0	True
3	ShapeU	229.288	-149.006	229.304	-156.521	237.527	-156.837	237.502	-148.406	0	True
4	Rect	250.683	-148.834	250.742	-159.965	257.973	-160.089	257.999	-148.761	0	True
5	Arc	228.021	-180.561	231.148	-187.72	238.314	-184.683			0	True
6	Circle	226.461	-210.218	232.034	-215.918	237.667	-210.322			0	True

(2)

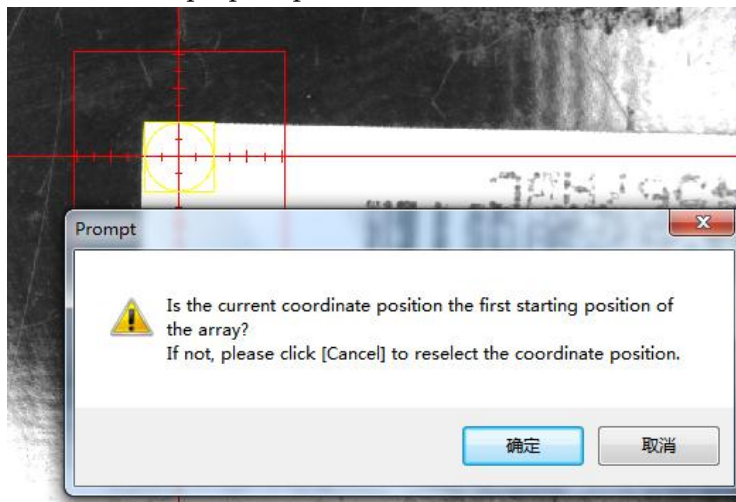
(10) "Array", when the processed PCBA is multi-piece specification, and the X and Y spacing are regular; after setting the cutting path of the first small board, it is easy to operate

through the "array" function. ; Select the path to the array and click on "Array" as shown below;

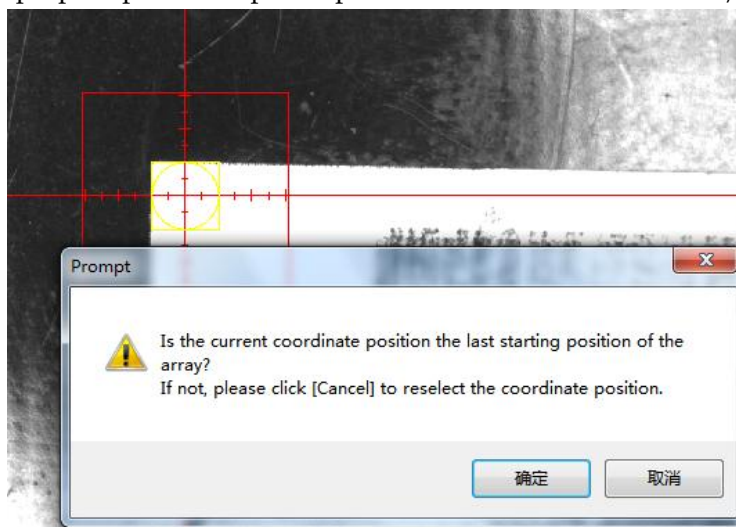
	Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State	X	Y
1	Line	133.656	-146.806	133.073	-159.03					0	True	Edit Row	Edit Column
2	ShapeL	145.102	-176.653	144.977	-185.079	152.249	-185.194			0	True	Cancel	TLP1
3	ShapeU	229.288	-149.006	229.304	-156.521	237.527	-156.837	237.502	-148.406	0	True		
4	Rect	250.683	-148.834	250.742	-159.965	257.973	-160.089	257.999	-148.761	0	True		
5	Arc	228.021	-180.561	231.148	-187.72	238.314	-184.683			0	True		
6	Circle	226.461	-210.218	232.034	-215.918	237.667	-210.322			0	True		

(11)

At this point, the "array" becomes "TLP1". In the first small board, find the feature position common to other small boards, and move the camera cross cursor to the position. Click "TLP1", the system will pop up as shown below. Prompt box;

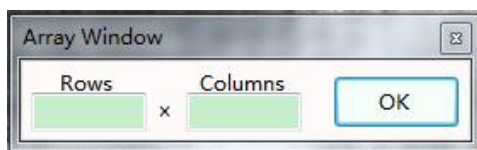


After the location is confirmed, click "OK", otherwise click "Cancel" to re-acquire; after clicking "OK", "TLP1" will change to "TLP2"; at this time, move the camera cross cursor to the last small board and the first block. The location of the common features of the small board, click "TLP2", the system will pop up the prompt box shown below;



After the location is confirmed, click "OK", otherwise click "Cancel" to re-acquire; click "OK", the system will pop up

the dialog box shown below;



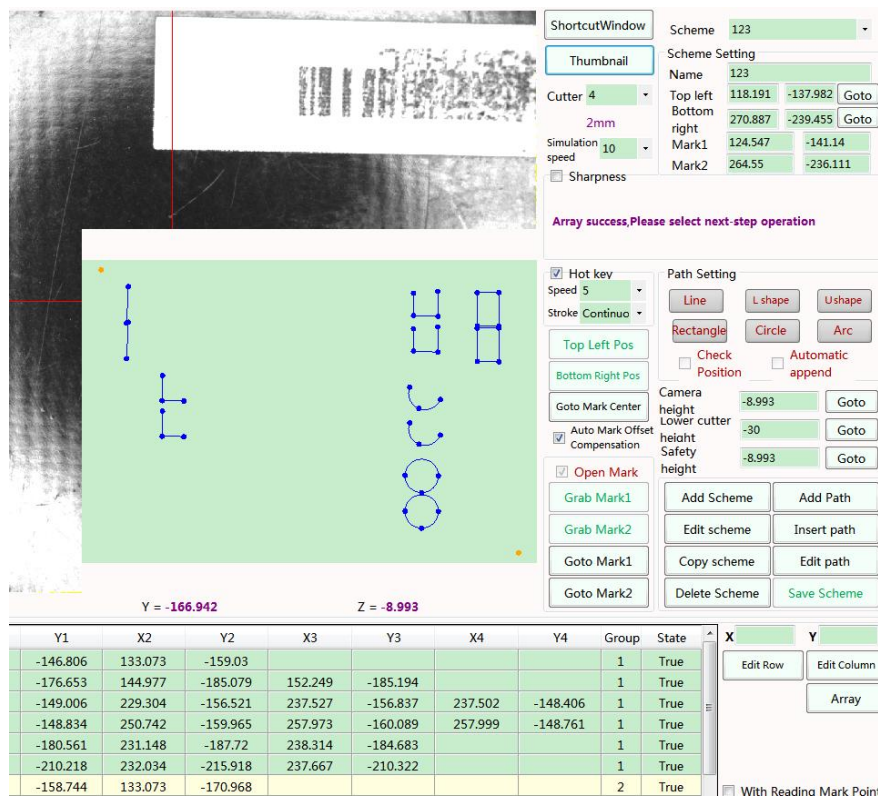
According to the PCBA board, enter “number of rows” and “number of columns”, enter 2x2 here, click “OK”, the system will copy the cutting path of the first small board to other small boards,

as shown in the following figure;

	Graph	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Group	State
1	Line	133.656	-146.806	133.073	-159.03					1	True
2	ShapeL	145.102	-176.653	144.977	-185.079	152.249	-185.194			1	True
3	ShapeU	229.288	-149.006	229.304	-156.521	237.527	-156.837	237.502	-148.406	1	True
4	Rect	250.683	-148.834	250.742	-159.965	257.973	-160.089	257.999	-148.761	1	True
5	Arc	228.021	-180.561	231.148	-187.72	238.314	-184.683			1	True
6	Circle	226.461	-210.218	232.034	-215.918	237.667	-210.322			1	True
7	Line	133.656	-158.744	133.073	-170.968					2	True
8	ShapeL	145.102	-188.591	144.977	-197.017	152.249	-197.132			2	True
9	ShapeU	229.288	-160.944	229.304	-168.459	237.527	-168.775	237.502	-160.344	2	True

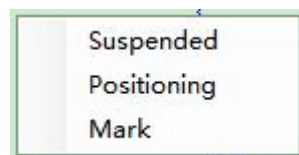
Each small board will be distinguished by different colors, and the group of each path will be listed in which group; the path of the array is not 100% correct, so each path needs to be checked and corrected;

(11) “Thumbnail”, click this button, in the lower right corner of the visual interface, as shown below;



When the thumbnail coordinates are selected and the path coordinates are selected, the thumbnails are displayed in red;

On the thumbnail, click the right mouse button to move the thumbnail position as needed, as shown below.;



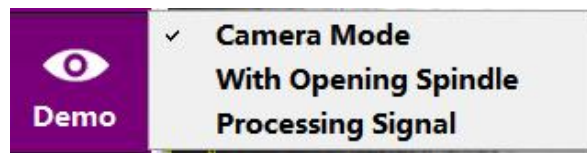
①Hover: Check to move the thumbnail window arbitrarily by holding down the left mouse button;

②Positioning: Check to fix the thumbnail to the lower right corner of the visual window by default;

③Mark: Check to display the selected path on the thumbnail;

(12) "Demo mode", click this button on the left side of the scheme setting interface, check the corresponding

function Effective, as shown below;



① Camera mode: Check the camera cross cursor to simulate whether the path is correct (the Z axis is repeated simulation at the camera height).

②With cutting: check, the Z axis is simulated by the simulated cutting height set by the machine;

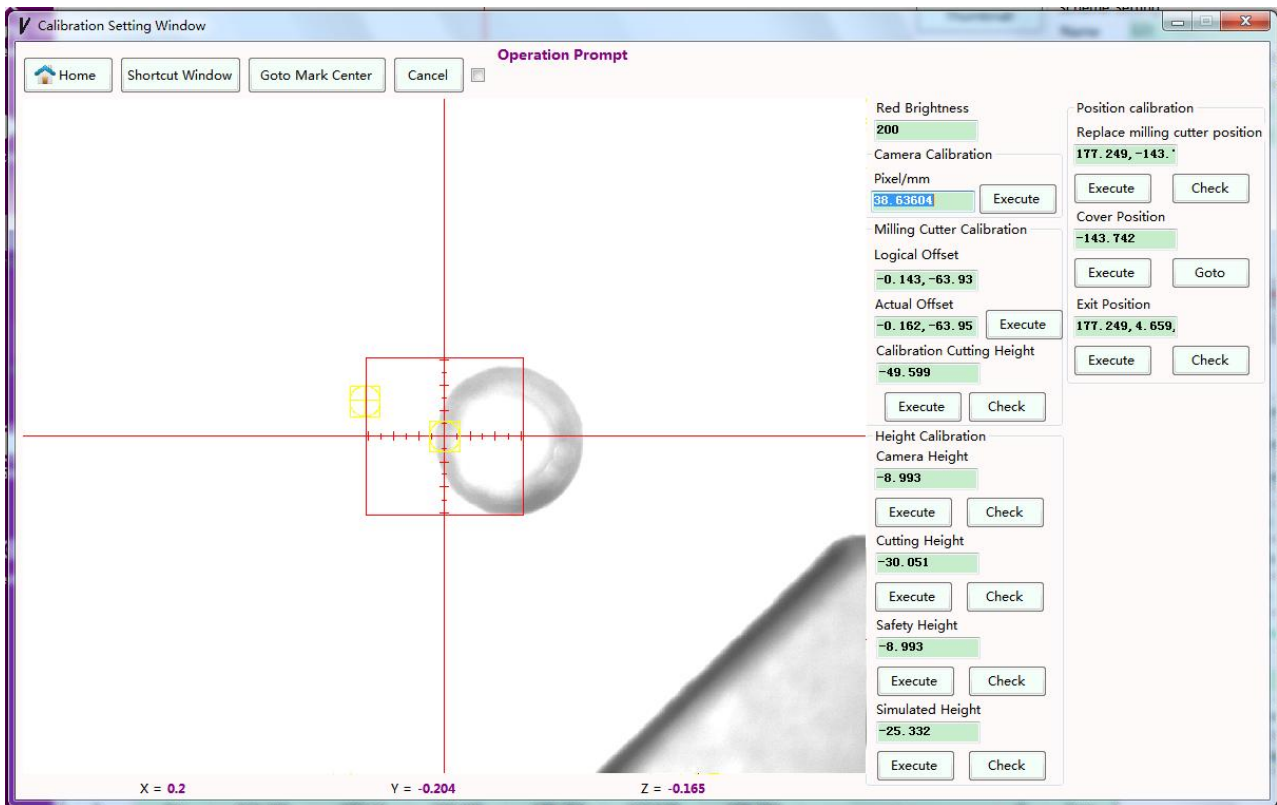
③Processing signal: check, you need to provide the signal to simulate;

## Chapter III、Calibration Setting

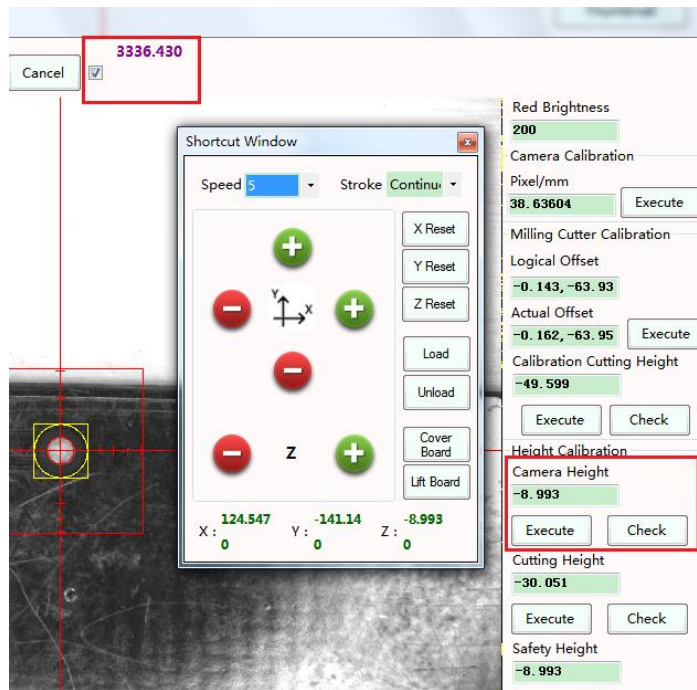
After the equipment is assembled, calibration settings are required. Generally, without disassembly, it is generally not need to recalibrate. Let's explain each function of the calibration settings below.

### 一.Machine parameter setting

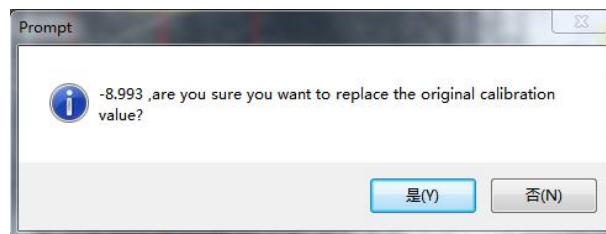
Place a PCBA board with Mark points on the equipment processing platform, click "machine parameter setting", pop up the interface shown in the figure below;



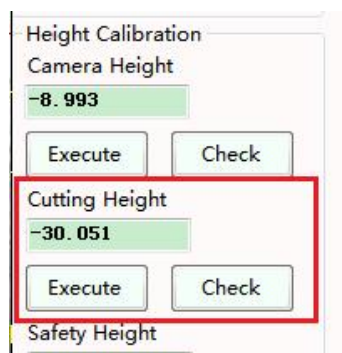
(1) Camera Height: When adding a new scheme, the default camera height value is added; in the red box below, check the box to display a series of changed values, move the camera cross cursor to the vicinity of the Mark point, and slowly adjust the Z-axis height through the shortcut window. The value here is the maximum value. Click “Execute” to display the following figure;



Click "Get", the system will pop up the prompt box shown below;

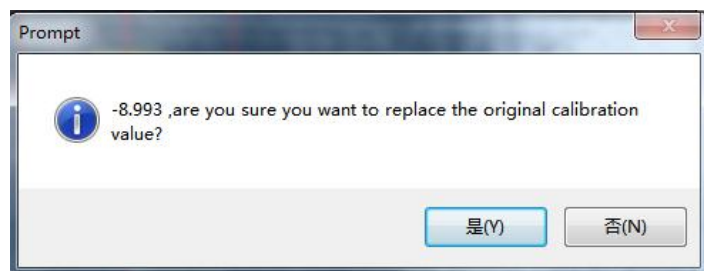


Click "OK"; click "check" to verify that it is correct;  
 (2) Lower knife height: the value of the lower knife height added by default when adding a new scheme; through the shortcut window, slowly adjust the height of the Z axis, click "Execute", as shown below;



Click "Get", the system will pop up the p

rompt box shown below;

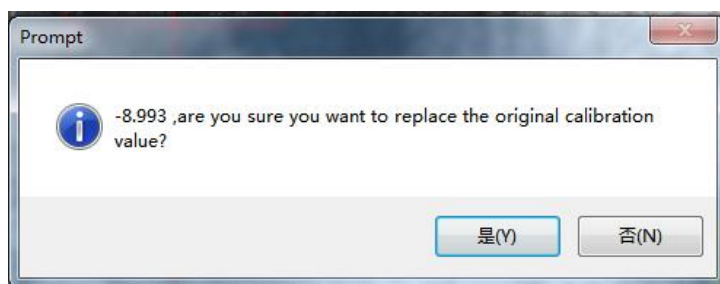


Click "OK"; click "check" to verify that it is correct;

(3) Safety Height: When adding a new scheme, the safe height value is added by default; through the shortcut window, slowly adjust the height of the Z-axis, and click "Execute" to display the following figure;



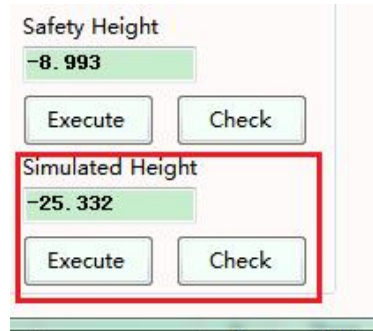
Click "Get", the system will pop up the prompt box shown below;



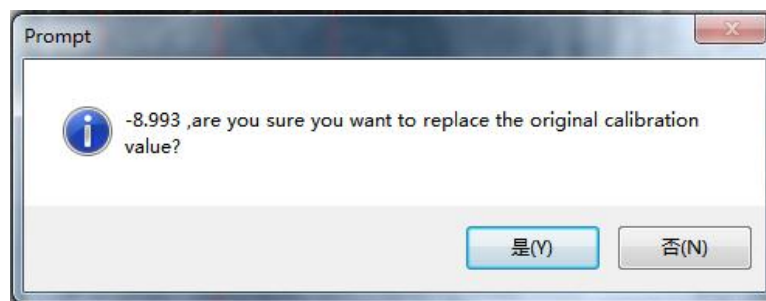
Click "OK"; click "check" to verify that it is correct;

(4) Simulation height: set the lower knife height value when the simulation is set; slowly adjust

the Z axis height through the shortcut window, click “Execute” to display as shown below;

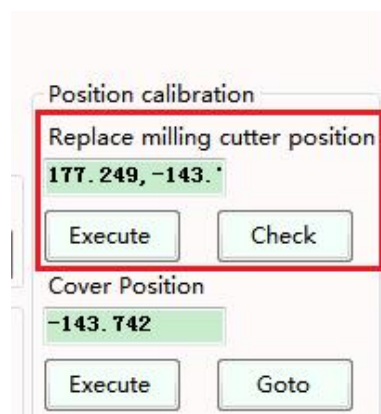


Click “Get”, the system will pop up the prompt box shown below;

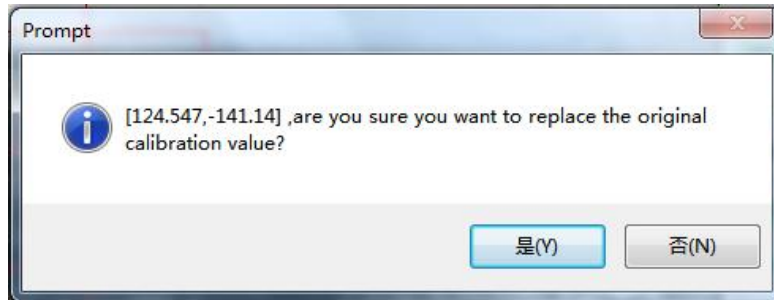


Click “OK”; click “check” to verify that it is correct;

(5) Replace milling cutter position: the position coordinate of each axis of the device when the tool is changed; move through the shortcut window Move the cutter to the replacement position to be set, click “Execute” to display as shown below;

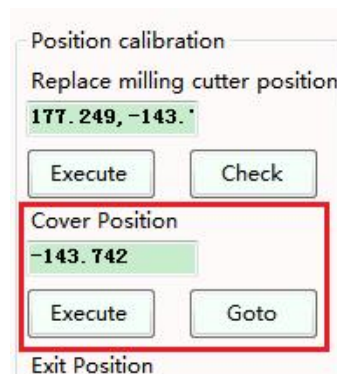


Click "Get", the system will pop up the prompt box shown below;

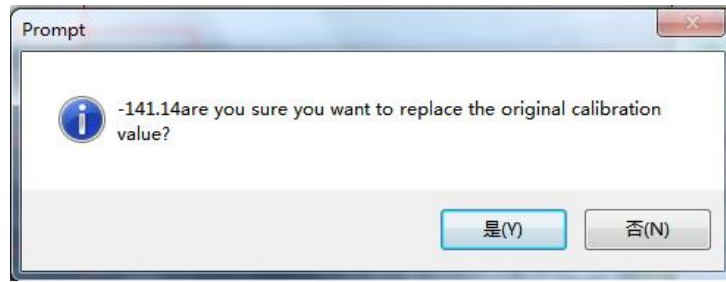


Click "OK"; click "check" to verify that it is correct;

(6) Cover Position: Set the processing platform to move to the position of the cover automatically, let the cover be properly put down, and then carry out the production processing (this setting needs to have the cover function to take effect); through the shortcut window, move the processing platform to the cover position, click "Execute" , as shown below;



Click "Get", the system will pop up the prompt box shown below;



Click "OK"; click "check" to verify that it is correct;

(7) Exit Position: After setting the processing, the position where the processing platform is moved out; through the shortcut window, move the processing platform to the desired position, click "Execute", and the display is as shown below;



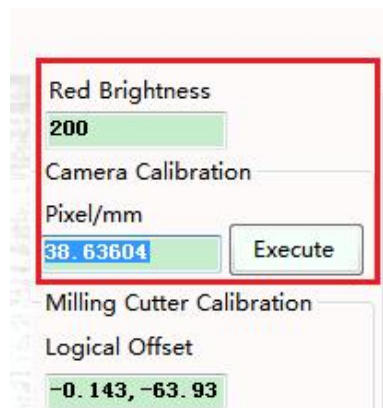
Click "Get", the system will pop up the prompt box shown below;



Click "OK"; click "check" to verify that it is correct;

(8) Red Brightness: Adjust camera light source;

(9) Camera Calibration: The camera pixels are mainly calibrated here. This value is related to the accuracy of the grab Mark, because this value must be accurate; click “View” at “Camera Height” to move the camera to the set optimal imaging position, and the camera cross cursor Move to the Mark Center of the PCBA board and click on “To Mark Center” to make the camera recognize Mark well. (If you can't recognize it, you need to adjust the Mark parameter in “Camera Settings”), click “Execute”, then click “Pixel Calibration”. , as shown below;



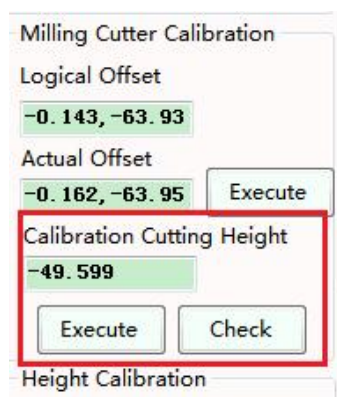
At this point, the camera cross cursor moves around the center of Mark to obtain relevant data. (If the camera does not move when Mark can be recognized, the value of “Mark Recognition Range” should be set larger in the advanced window). , the system will pop up the prompt box shown below;



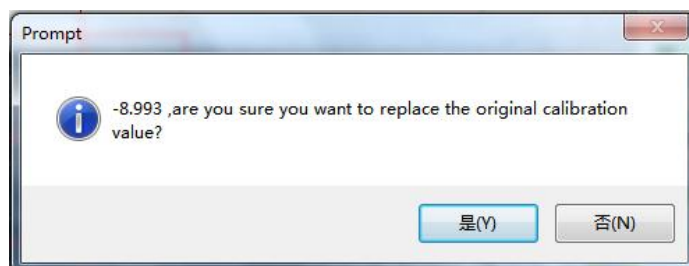
Clicked “ Y” ;

(10) Milling Cutter Calibration: In the assembly, there is a certain deviation between the camera and the spindle, and the system compensates by the calibrated value;

① Calibration Cutting Height: According to the thickness of the placed PCBA board, slowly adjust the Z-axis height through the shortcut window, so that the milling cutter can cut a complete circular hole on the PCBA board, as shown in the figure below;



Clicked “Execute” , as shown in the figure below;



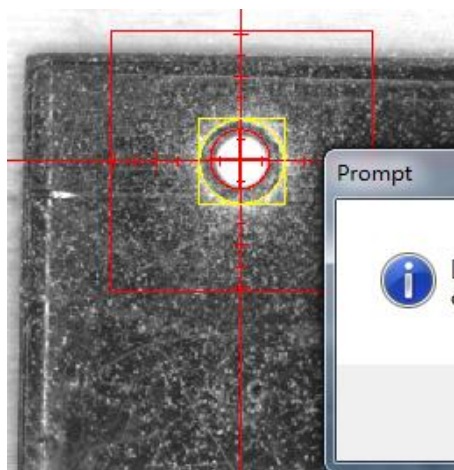
Clicked “Y” is ok; Click “check” to verify that it is co

rrrect;

2 actual deviation: according to the position of the cutting hole of the milling cutter, the system automatically calculates between the camera and the spindle Deviation value;

Move the camera cross cursor to the cuttable position through the shortcut window, click “Execute”, the device will cut a hole on the PCBA board according to the value on “Logical deviation”. After cutting, the camera will automatically move to the cutting. Nearby location;

If the center position of the camera cross cursor deviates too much from the center of the hole, you need to align the center positions of the two through the shortcut window, as shown in the following figure;



Clicked “Execute”, as shown in the figure below;

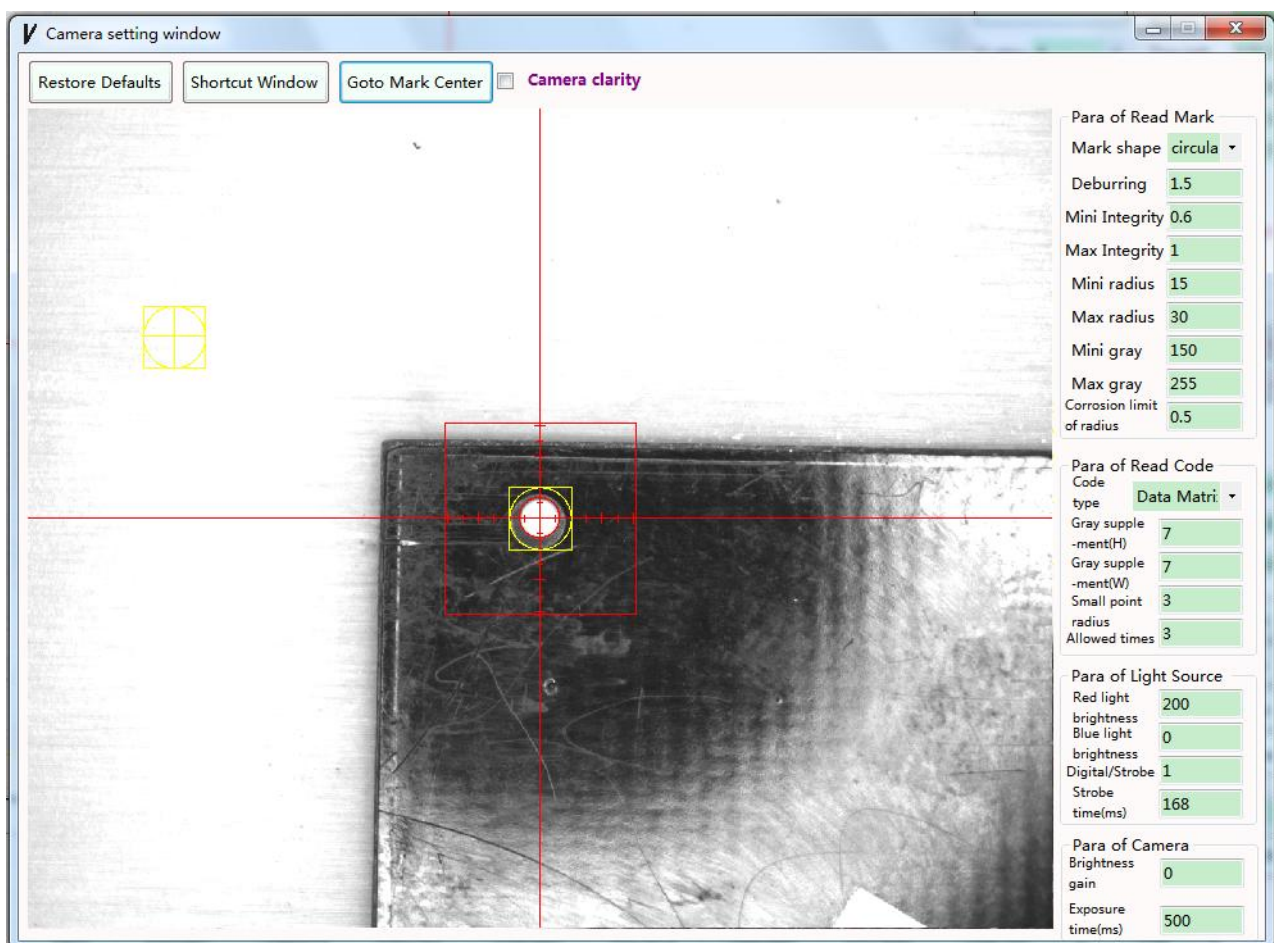


Clicked “Y” confirmed;

③Logical deviation: The deviation of the system the ory does not represent the true deviation between the camera and the spindle. This value can be edited (you can verify that the actual deviation is correct by copying the value on the “actual deviation” );

## 二. Camera Parameter Setting

Place a PCBA board with Mark points on the equipment processing platform, click “Camera Parameter Settings”,



(1) Mark parameter: Important parameters are minimum ra

diameter, maximum radius, minimum radius gray value, maximum gray value;

①Mark shape: support “circularity” only;

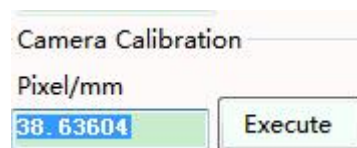
②Deburring: Remove burrs from image refinement and improve recognition rate;

③Mini integrity: The minimum value is 0.1, and the smaller the value, the lower the quality requirement for Mark;

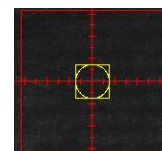
④Max integrity: The maximum value is 1. The higher the value, the higher the quality requirement for Mark;

⑤Mini/Max radius: This value is in “pixels” and needs to be set according to the value of “camera calibration” in “machine parameter settings”.

As shown in the following figure (1), 37.665862 represents 1 mm; as shown in Figure (2), in the camera cross cursor, each small square represents 0.5 mm.



(1)



(2)

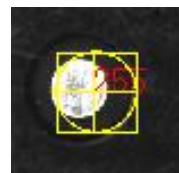
According to the size of the current Mark, the diameter is about 1 mm, then the minimum radius, fill in 18, fill in the maximum radius 38;

⑥Min/Max Gray: This value needs to be set according to the current Mark, the gray value displayed by the camera; move the mouse cursor outside the edge of the Mark, click the right mouse button, and the display is as show

n in the following figure (1), the display is 37; move the mouse cursor to the edge of the Mark, Click the right mouse button and the display is as shown in the following figure (2). The display is 255;



(1)

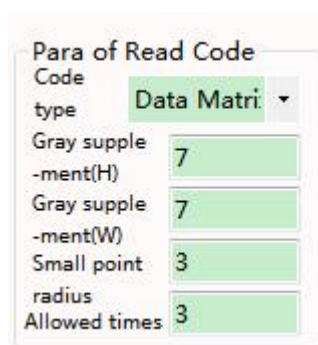


(2)

Therefore, the mini gray value theory is 37 (actually, in order to make the camera better obtain Mark, the minimum gray value is appropriately increased); the maximum gray value theory is 255;

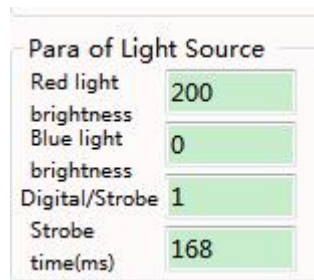
⑦Radius corrosion limit: The setting range is 0~1. The larger the value, the higher the quality of the Mark.

(2) Decode Parameter: According to the size of different codes (such as DM code, QR code), the corresponding settings are made to achieve the best effect. This function is customized;

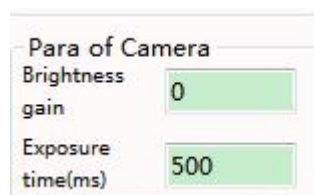


(3) Light source parameter: The red light corresponds to the cold color plate, the blue light corresponds to the warm color plate (the value range should be 0 to 250), and the device uses the red light source, so the red light

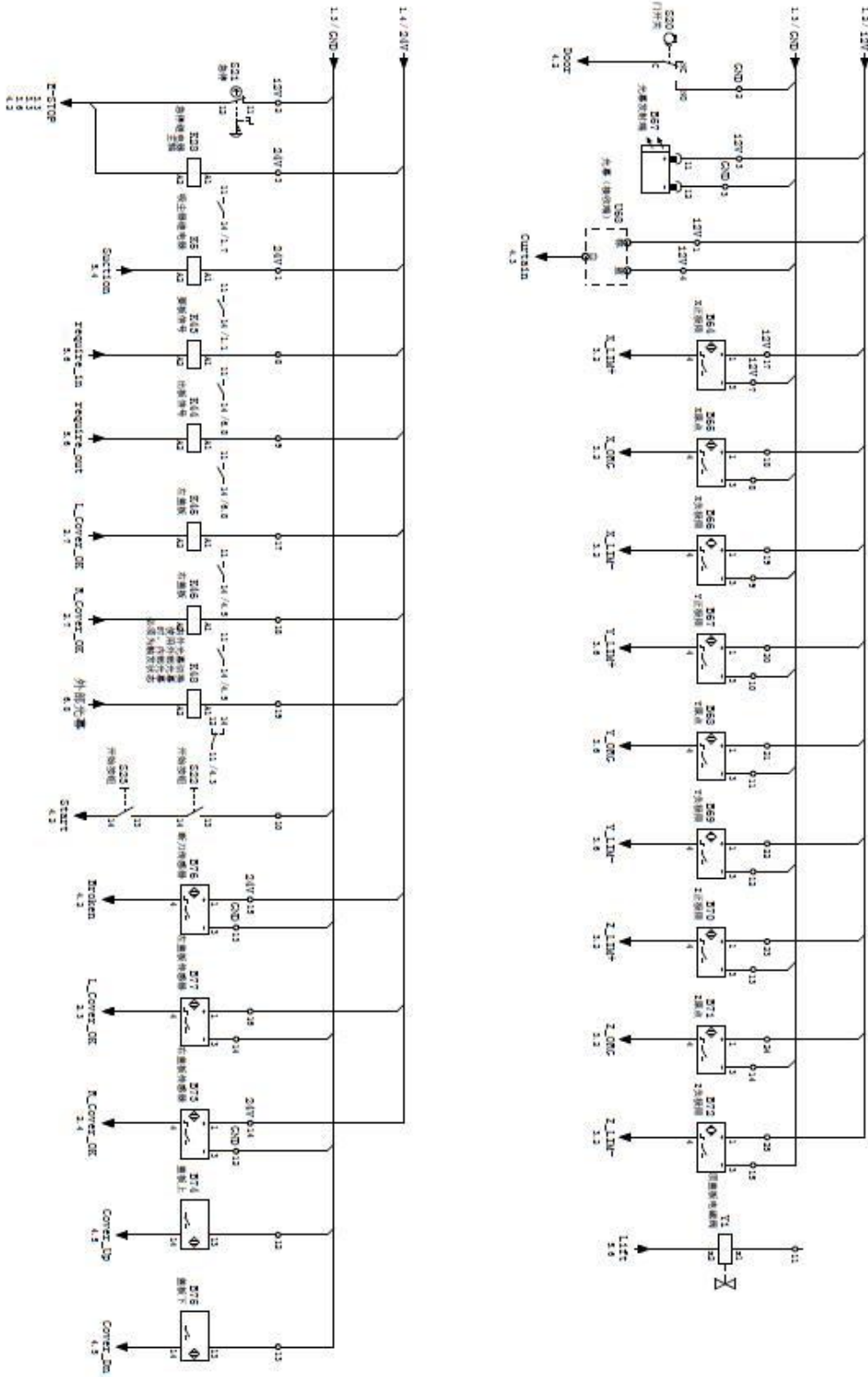
brightness can be finely adjusted here; the higher the value, the brighter the light source;



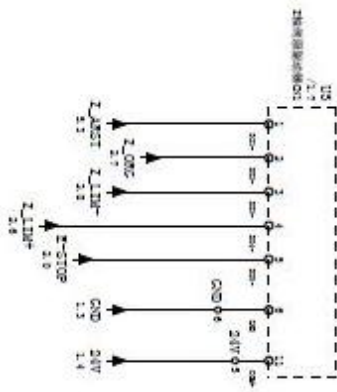
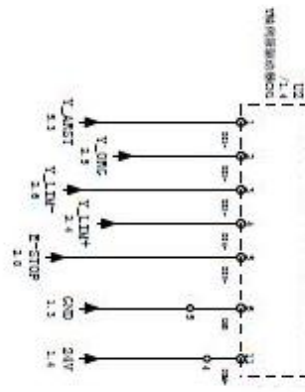
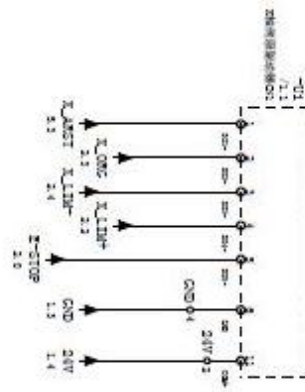
(4) Camera Parameter: Adjust the "exposure time" according to different plates; achieve the best imaging results when the camera gets Mark;







Relays and Sensors

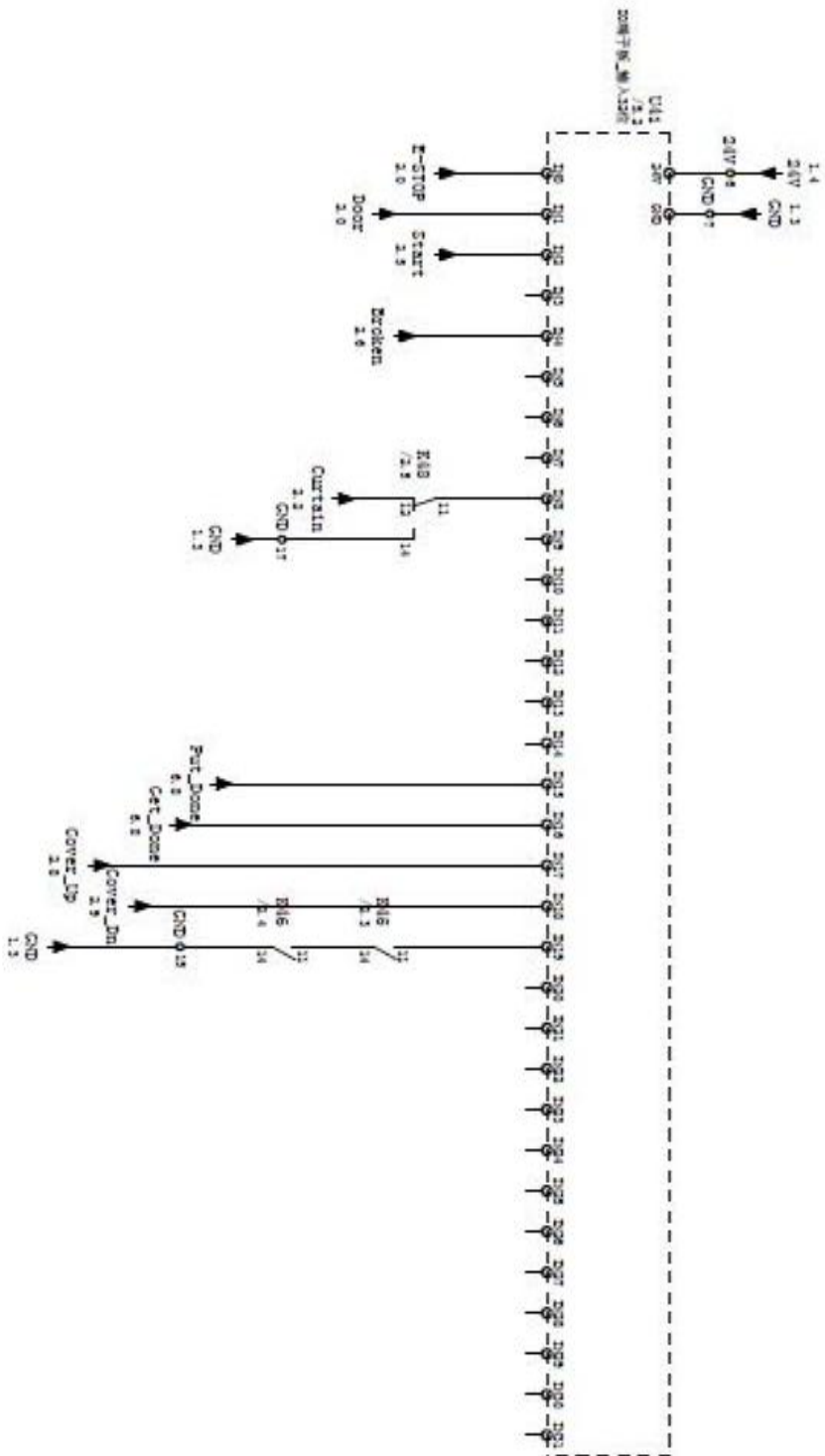


相应的CS2驱动端参数设置(1.1线杆号接CS1, 2线杆号接CS2):

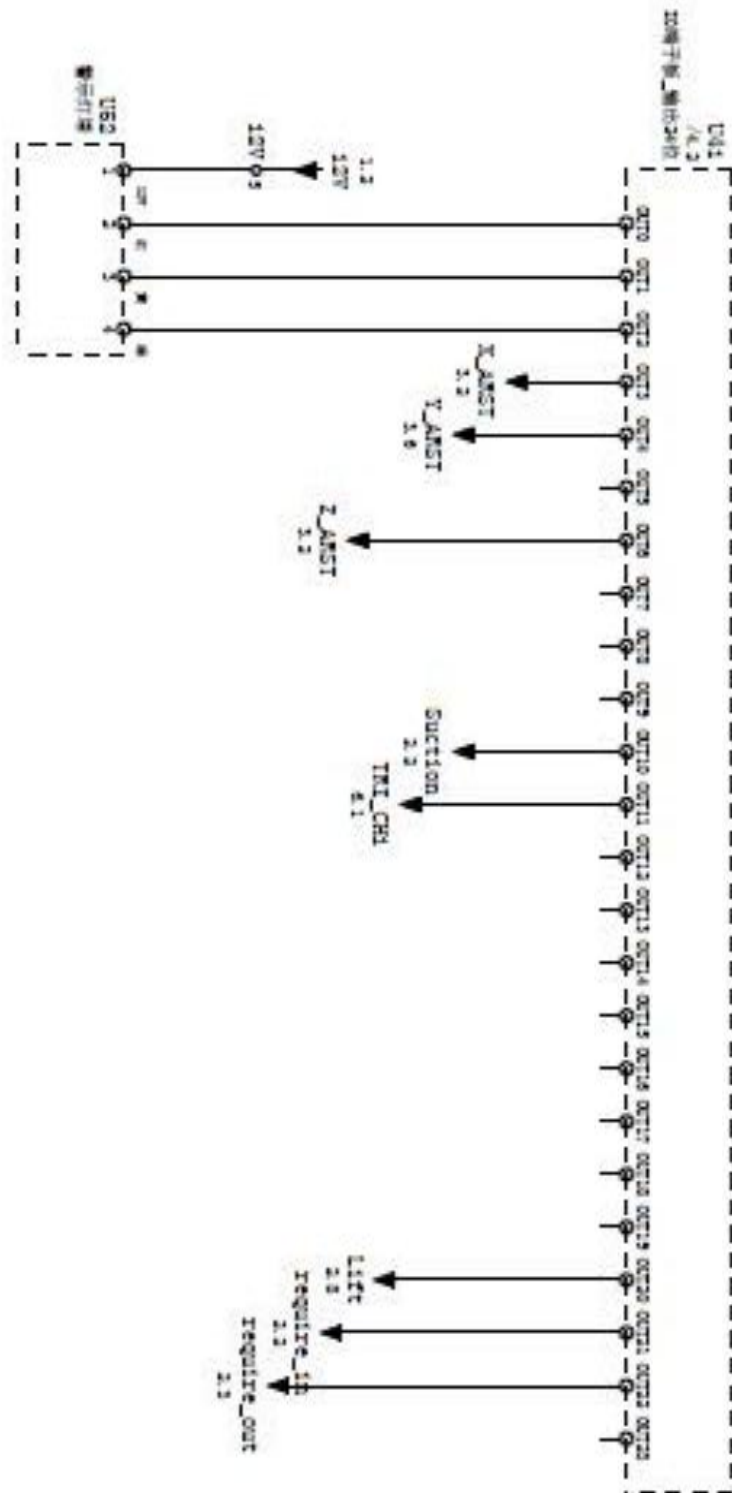
```

P1-00 1002
P1-09 10
P1-07 3
P1-14 1:1:64,1:80
P1-16 1:1:8000,1:1000
P1-89 10
P2-00 125
P2-01 802
P2-06 80
P2-10 0402
P2-11 0121
P2-12 0122
P2-13 0123
P2-14 0021
P2-16 0000
P2-16 0000
P2-17 0000
P2-18 0000
P2-26 10
P2-26 80
P2-00 1:1:0004,1:1:0003
P2-12 0100 (总攻模式,保持齿轮比,不改变齿隙)
    
```

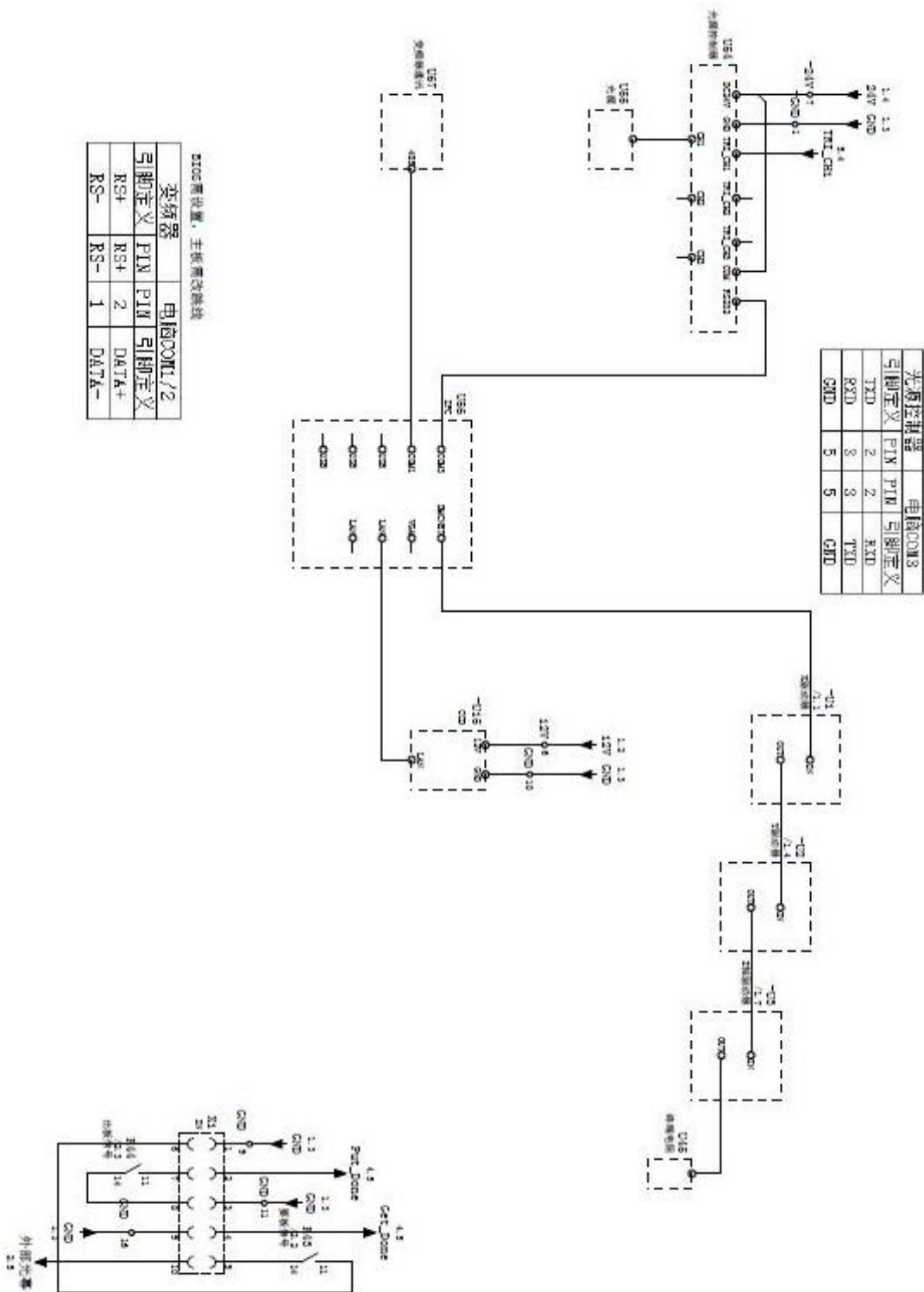
Servo wiring diagram



I0 connection diagram (input)



IO connection diagram (output)



Control circuit diagram

## Chapter Five、Troubleshooting Guide

### 一、Easy troubleshooting

#### 1. Power cannot be connected

★Check for power input.

★Check the switch of the power distribution or if the switch is broken.

★Confirm that the emergency stop of the equipment is turned off and the emergency stop switch of the equipment has been released.

#### 2. Equipment shakes sharply during processing

★Make sure that the four fixed foot cups of the machine are locked and that the axes are running stably.

#### 3. Processing positioning is not accurated

★Check if the X, Y, and Z axis couplings are loose.

★Is the camera loose?

★Check the hardware components and perform a mechanical calibration again through the software.

#### 4. Positioning clamping cylinder error

★Check if the air supply is stable.

★Check if the sensor of the cylinder is working.

#### 5. Milling cutter is easy to break

★The processing speed is too fast and the cutting speed should be reduced speed. Or confirm if there is a problem with the quality of the milling cutter.

#### 6. Poor dust collection

★Make sure that the dust collector motor rotates in the correct direction. If the direction is wrong, you can change the rotation direction of the motor by swapping any two of the three power cables.

★Check if the PVC pipe of the connected dust collector is loose and cracked.

## Chapter Six、Maintenance Service

### 一、 Replace the bit

Note: When the operator replaces the milling cutter, the spindle motor must be stopped to operate.

### 二、 Spindle maintenance

Regularly clean the spindle and cutter fixtures and it is recommended to clean them once a week.

Note: Do not use compressed air or ultrasonic instruments to clean the spindle. The cleaning agent should not be allowed to enter the inside of the spindle during the cleaning process.

### 三、 Lubricating

Ball screw pairs and other rolling friction transmission components can be considered to work with almost no wear as long as abrasive particles and chemically active substances are avoided. However, if dirt falls on the raceway or dirty oil is used, it will not only hinder the normal operation of the ball, but also sharply increase the wear.

The long-term use of equipment and the accumulation of dust during the production process will inevitably lead to increased wear of the ball screw, linear slide and bearing. Therefore, it is necessary to periodically inspect and inject new lubrication shafts for each transmission component. It is recommended that the inspection period be one month, but it should be changed depending on the frequency of use of the equipment. Lithium Grease can be used, which is waterproof and heat resistant.

(1) Carefully clean the oil on the rails and the surface of the screw, especially the oil in the grooves; pay attention to the oil in the mounting holes of the rails.

(2) Grease the inside of the transmission chamber with the grease gun nozzle until the internal dirt is completely squeezed out, and the extruded oil is removed to prevent the oil from corroding the guide rail.

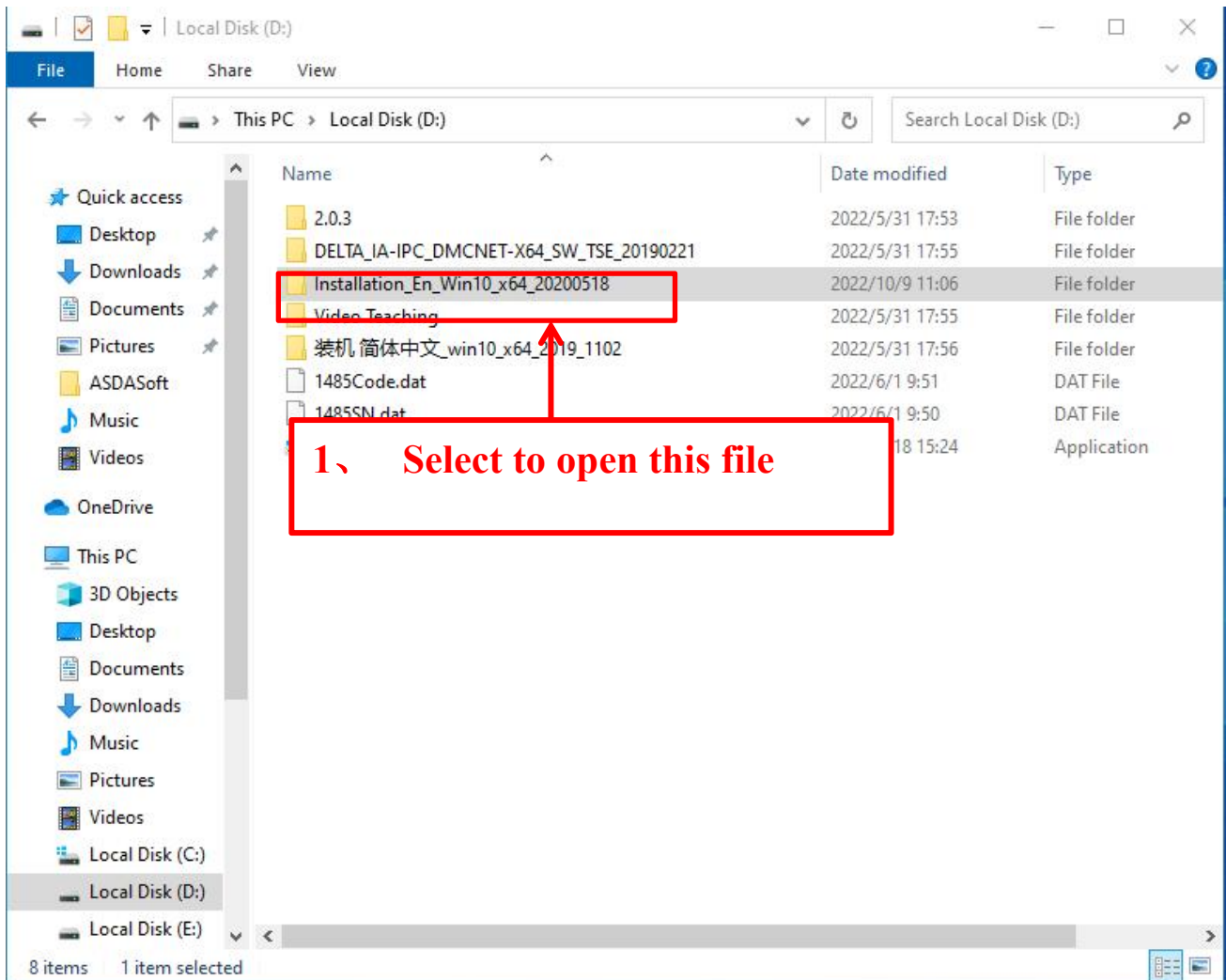
(3) Apply a small amount of grease to the inner groove of the ball screw with your fingers to maintain the lubricity.

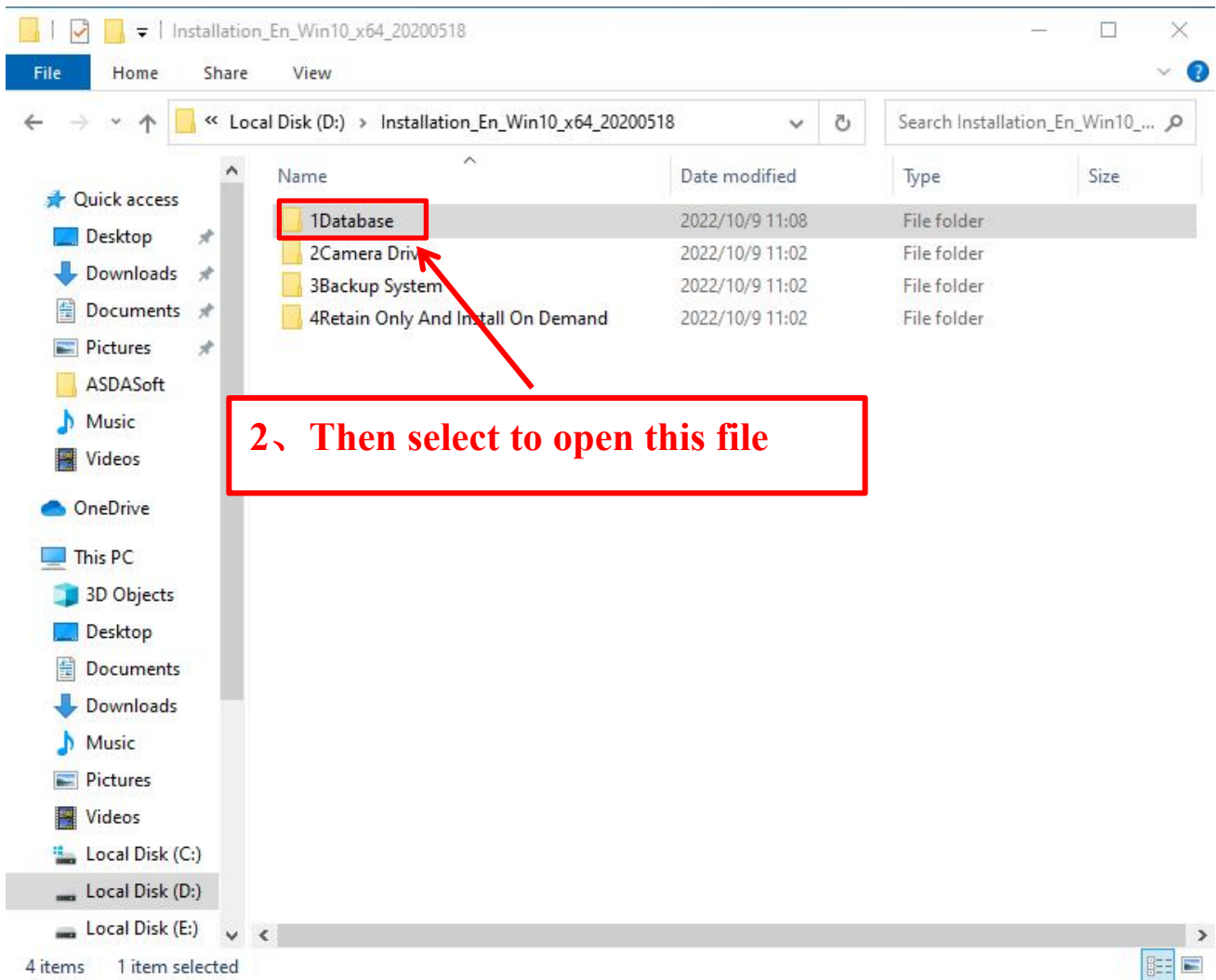
(4) Check the support bearings regularly. Check if the connection between the screw support and the machine is loose and the bearing is damaged. If there is any problem, tighten the loose parts and replace the support bearings in time.

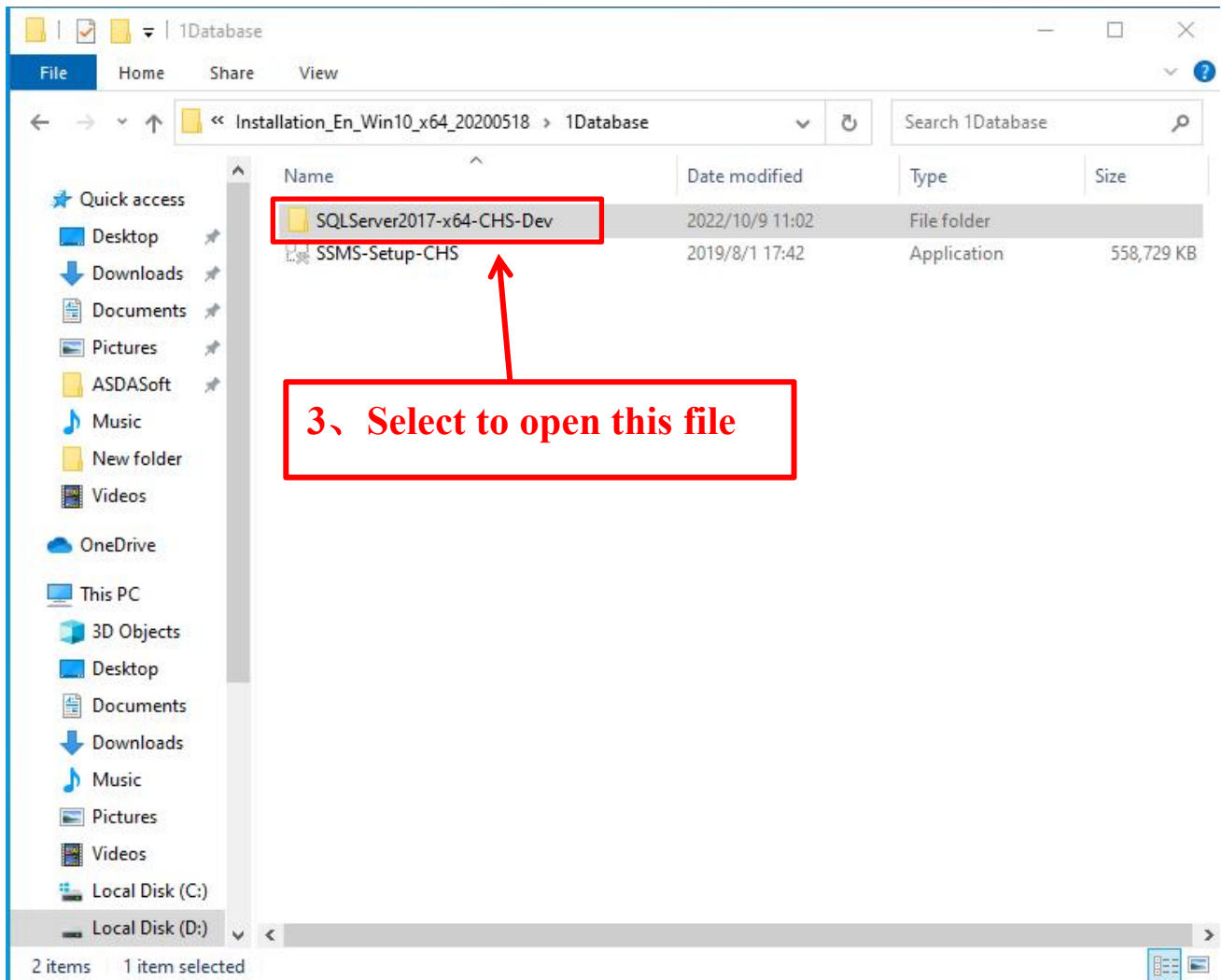
Add Function:

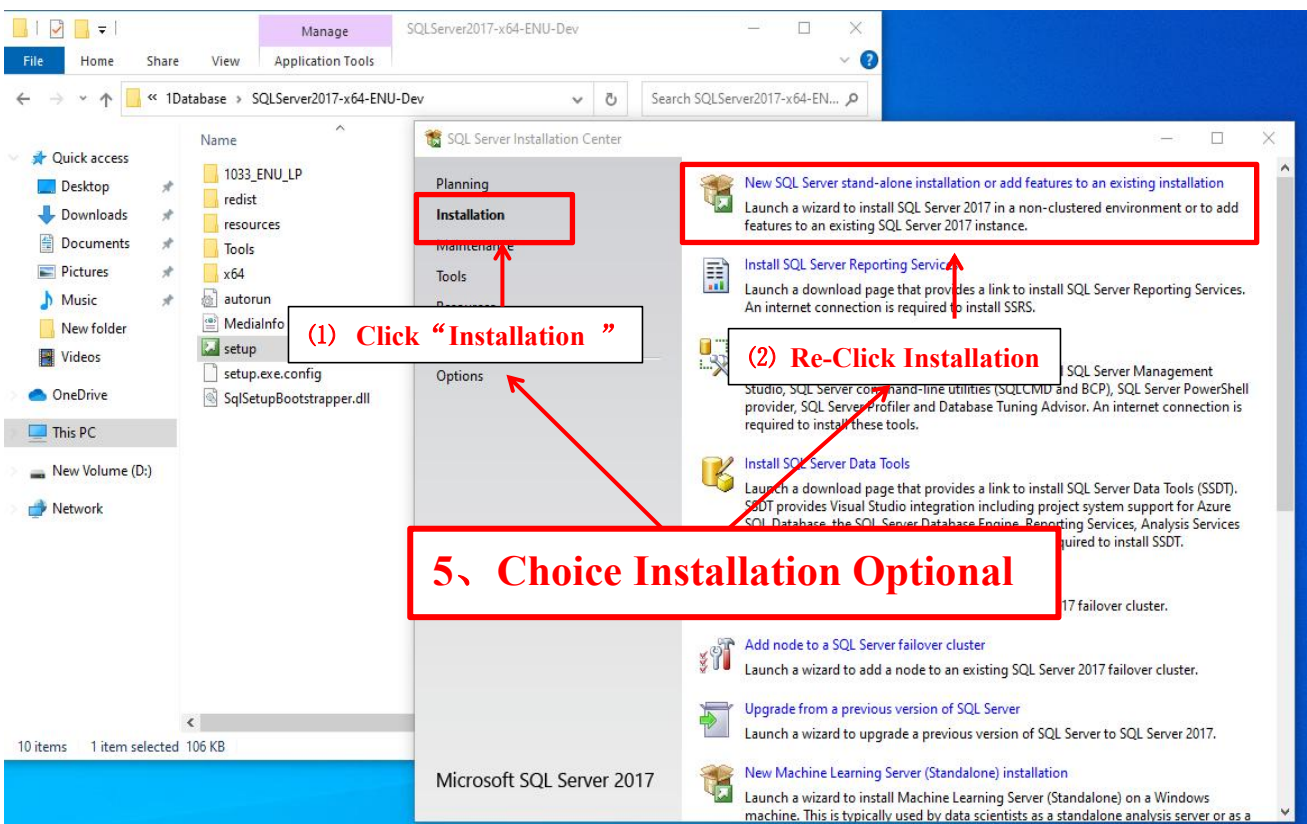
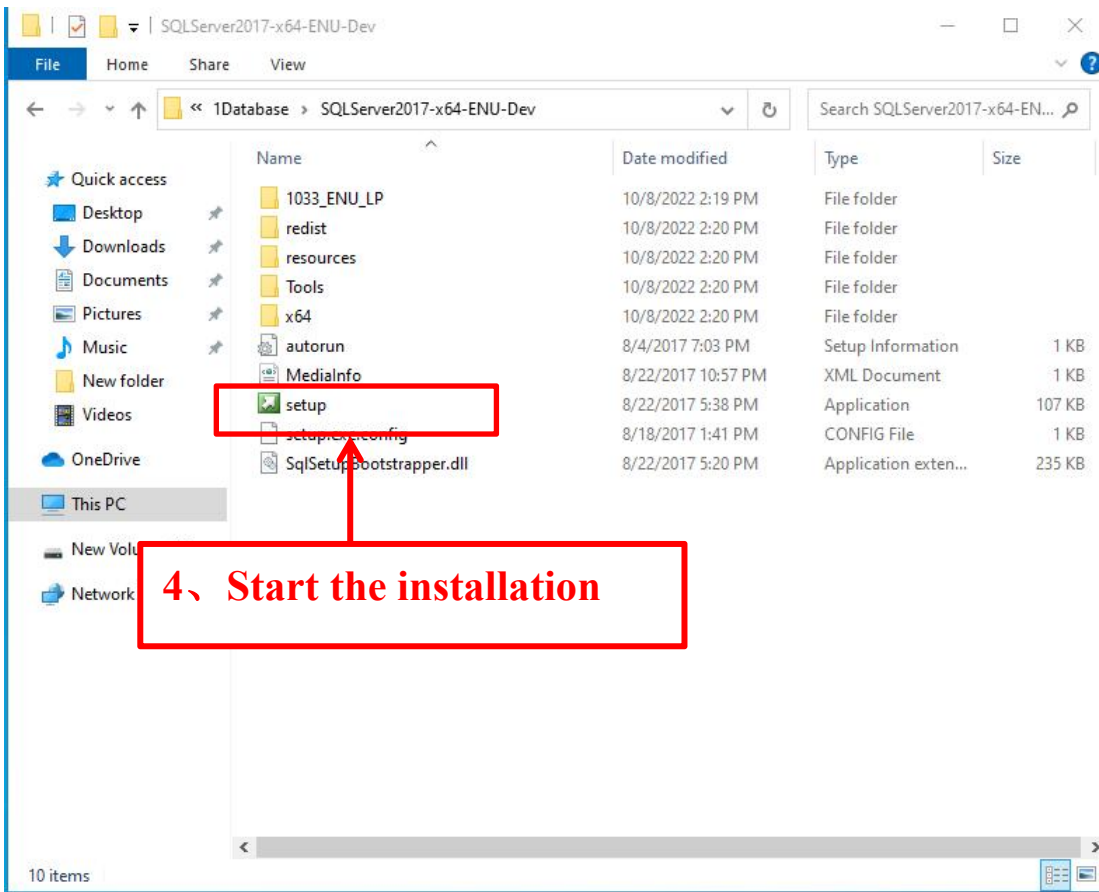
# Machine Driver Installation Instruction

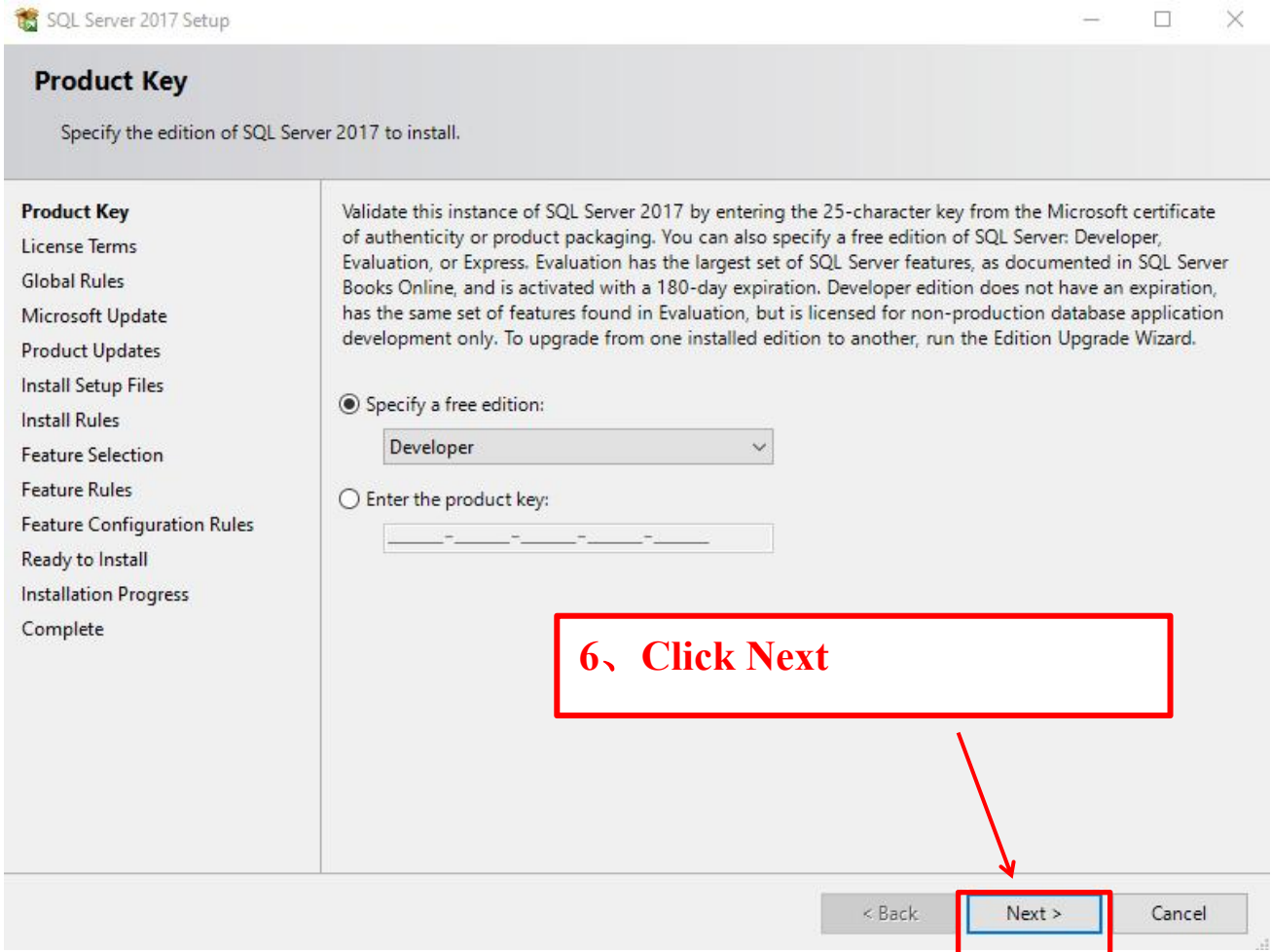
## Part 1: Database Installation

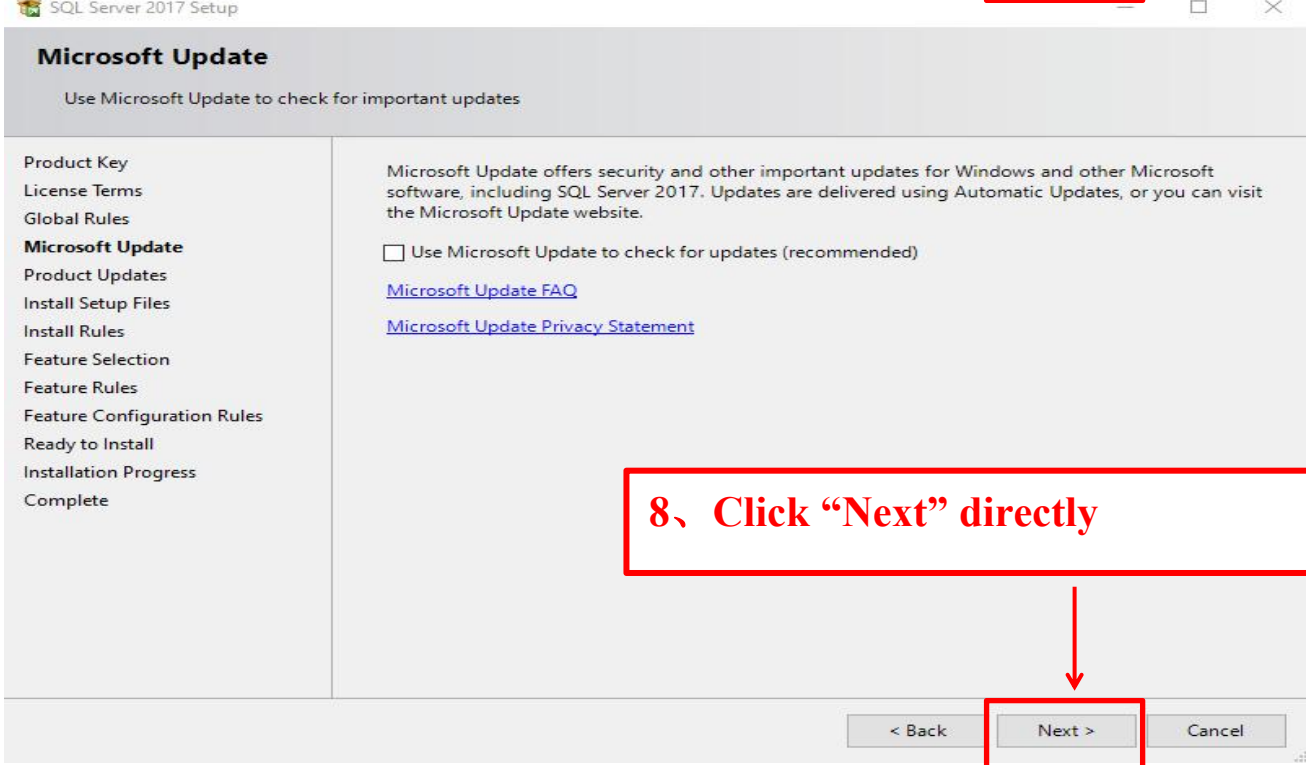
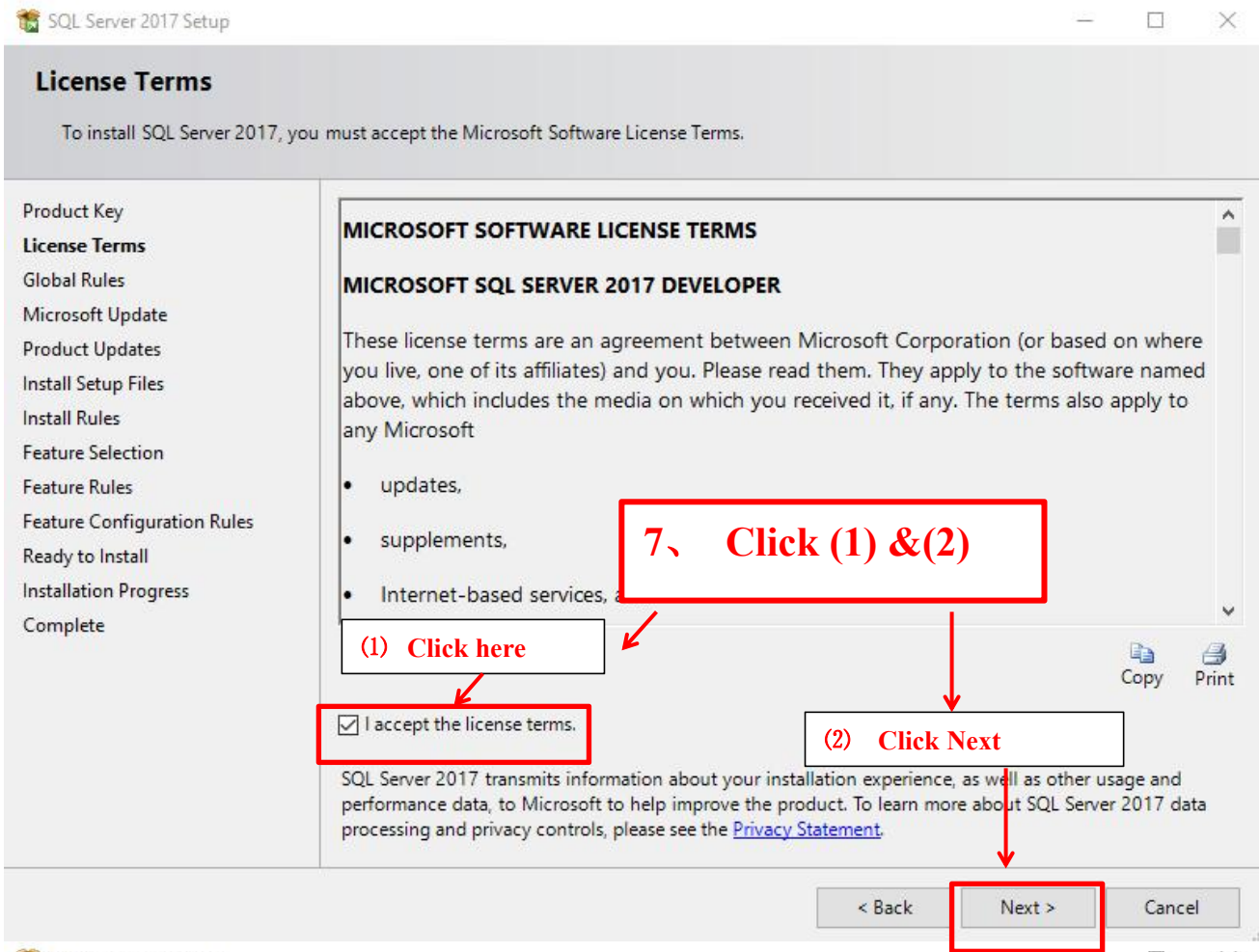


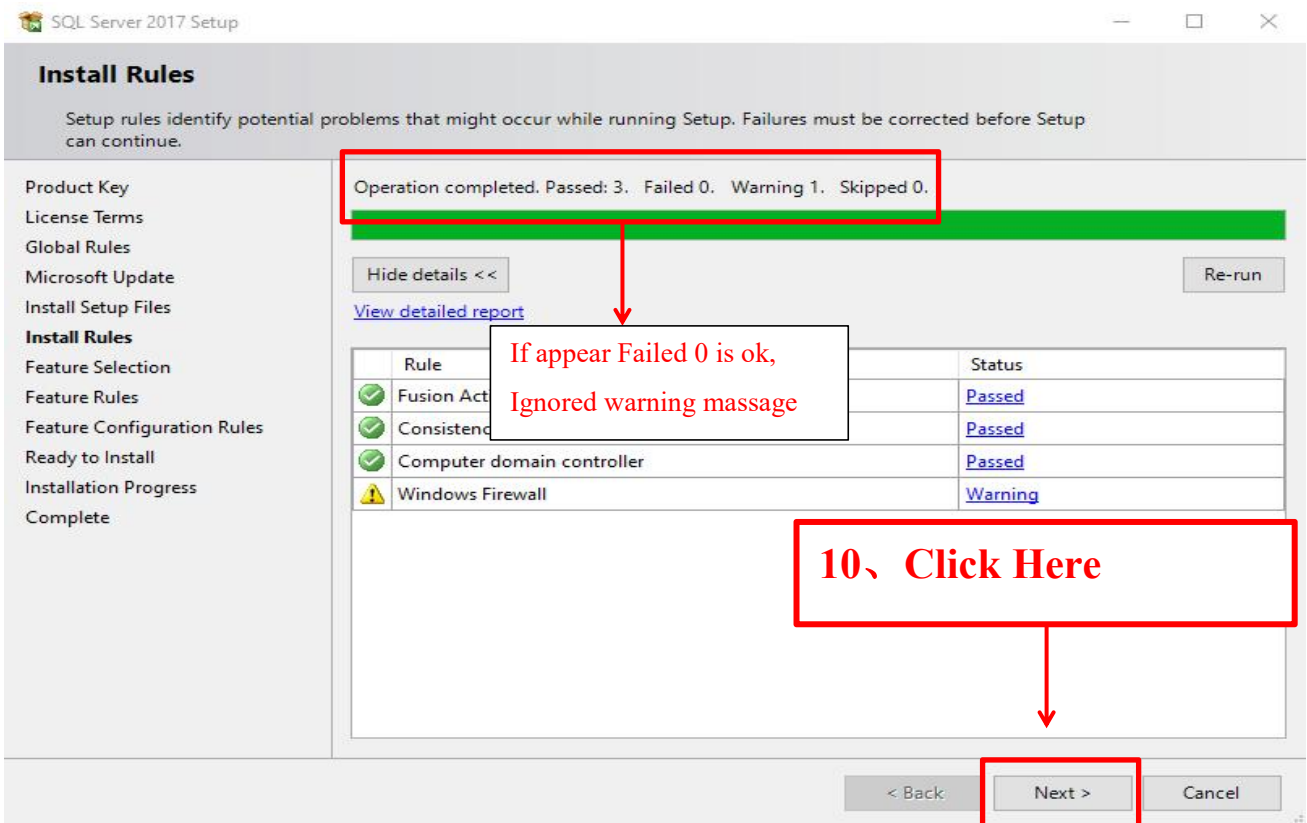
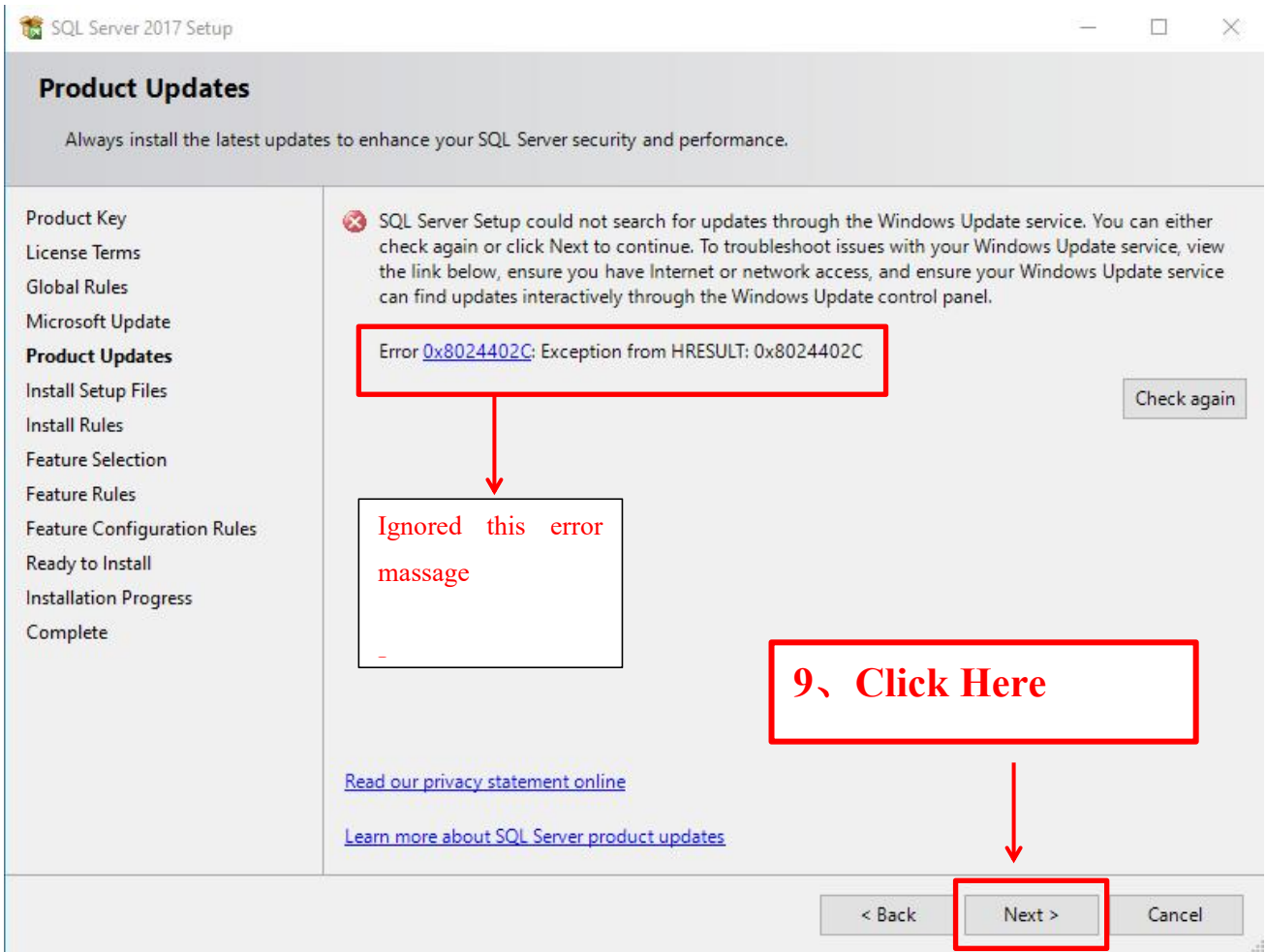












The screenshot shows the 'Feature Selection' window in SQL Server 2017 Setup. The window title is 'SQL Server 2017 Setup'. The main heading is 'Feature Selection' with the instruction 'Select the Developer features to install.' On the left is a navigation pane with options like 'Product Key', 'License Terms', 'Global Rules', 'Microsoft Update', 'Install Setup Files', 'Install Rules', 'Feature Selection' (highlighted), 'Feature Rules', 'Instance Configuration', 'Server Configuration', 'Database Engine Configuration', 'Feature Configuration Rules', 'Ready to Install', 'Installation Progress', and 'Complete'. The main area is divided into 'Features:' and 'Feature description:'. Under 'Features:', there are three sections: 'Instance Features' (with a red box around it), 'Shared Features', and 'Redistributable Features'. The 'Instance Features' section includes: Database Engine Services (checked), SQL Server Replication (checked), Machine Learning Services (In-Database) (unchecked), R (unchecked), Python (unchecked), Full-Text and Semantic Extractions for Search (checked), Data Quality Services (unchecked), PolyBase Query Service for External Data (unchecked), Analysis Services (unchecked), Machine Learning Server (Standalone) (unchecked), R (unchecked), Python (unchecked), Data Quality Client (unchecked), Client Tools Connectivity (checked), Integration Services (unchecked), Scale Out Master (unchecked), Scale Out Worker (unchecked), Client Tools Backwards Compatibility (checked), Client Tools SDK (checked), Distributed Replay Controller (unchecked), Distributed Replay Client (unchecked), SQL Client Connectivity SDK (checked), and Master Data Services (unchecked). The 'Feature description:' area shows a note about Reporting Services, a description of instance features, prerequisites (Already installed: Windows PowerShell 3.0 or higher, Microsoft .NET Framework 4.6; To be installed from media: Microsoft Visual C++ 2015 Redistributable), and disk space requirements (Drive C: 1732 MB required, 54027 MB available). At the bottom, there are 'Select All' and 'Unselect All' buttons, directory fields for 'Instance root directory', 'Shared feature directory', and 'Shared feature directory (x86)', and navigation buttons '< Back', 'Next >', and 'Cancel'. A red box highlights the 'Next >' button. Two red callout boxes are present: one on the left says 'Click optional as reference of right image' with an arrow pointing to the 'Instance Features' list; another on the right says '11、 After Click Here' with an arrow pointing to the 'Next >' button.

SQL Server 2017 Setup

### Feature Selection

Select the Developer features to install.

Looking for Reporting Services? [Download it from the web](#)

**Features:**

- Instance Features**
  - Database Engine Services
    - SQL Server Replication
    - Machine Learning Services (In-Database)
      - R
      - Python
    - Full-Text and Semantic Extractions for Search
    - Data Quality Services
    - PolyBase Query Service for External Data
  - Analysis Services
- Shared Features**
  - Machine Learning Server (Standalone)
    - R
    - Python
  - Data Quality Client
  - Client Tools Connectivity
  - Integration Services
  - Scale Out Master
  - Scale Out Worker
  - Client Tools Backwards Compatibility
  - Client Tools SDK
  - Distributed Replay Controller
  - Distributed Replay Client
  - SQL Client Connectivity SDK
  - Master Data Services
- Redistributable Features**

**Feature description:**

The configuration and operation of each instance feature of a SQL Server instance is isolated from other SQL Server instances. SQL Server instances can operate side-by-side on the same computer.

**Prerequisites for selected features:**

Already installed:  
... Windows PowerShell 3.0 or higher  
... Microsoft .NET Framework 4.6

To be installed from media:  
... Microsoft Visual C++ 2015 Redistributable

**Disk Space Requirements**

Drive C: 1732 MB required, 54027 MB available

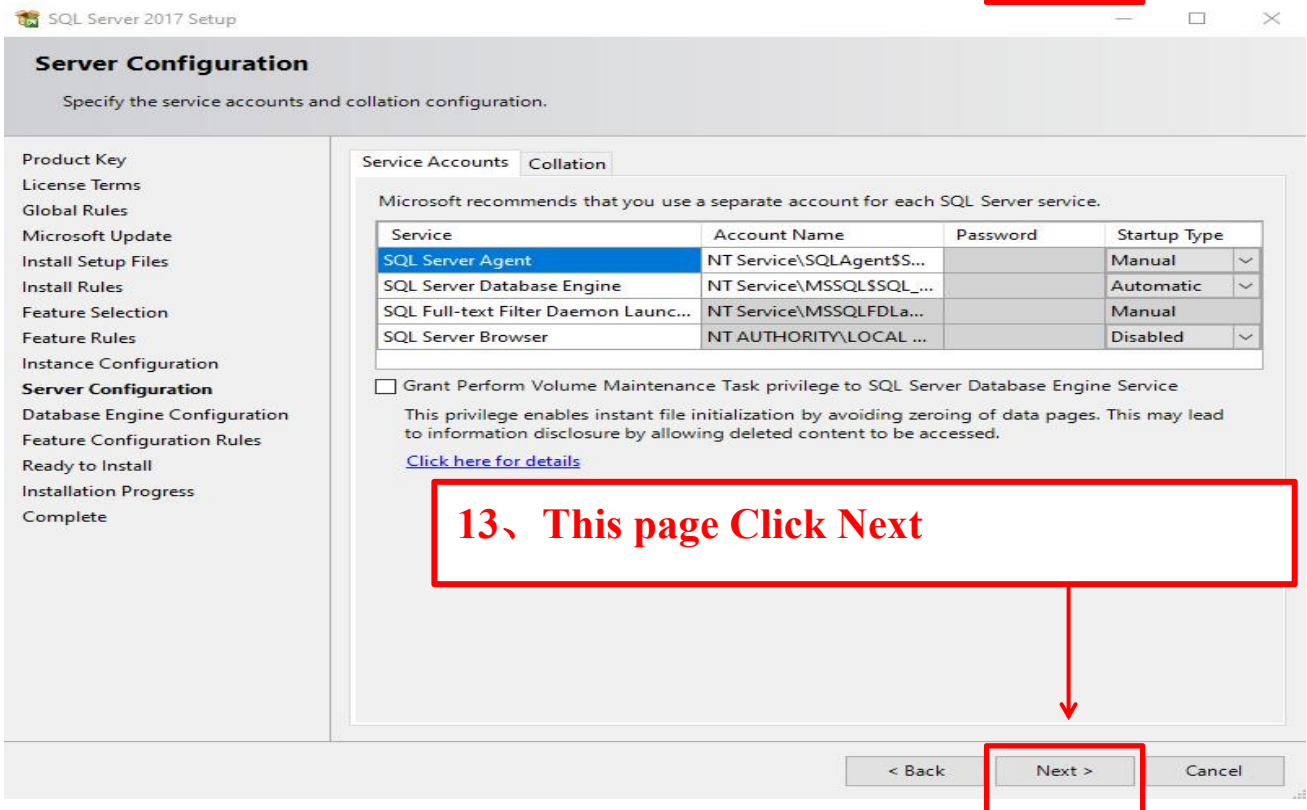
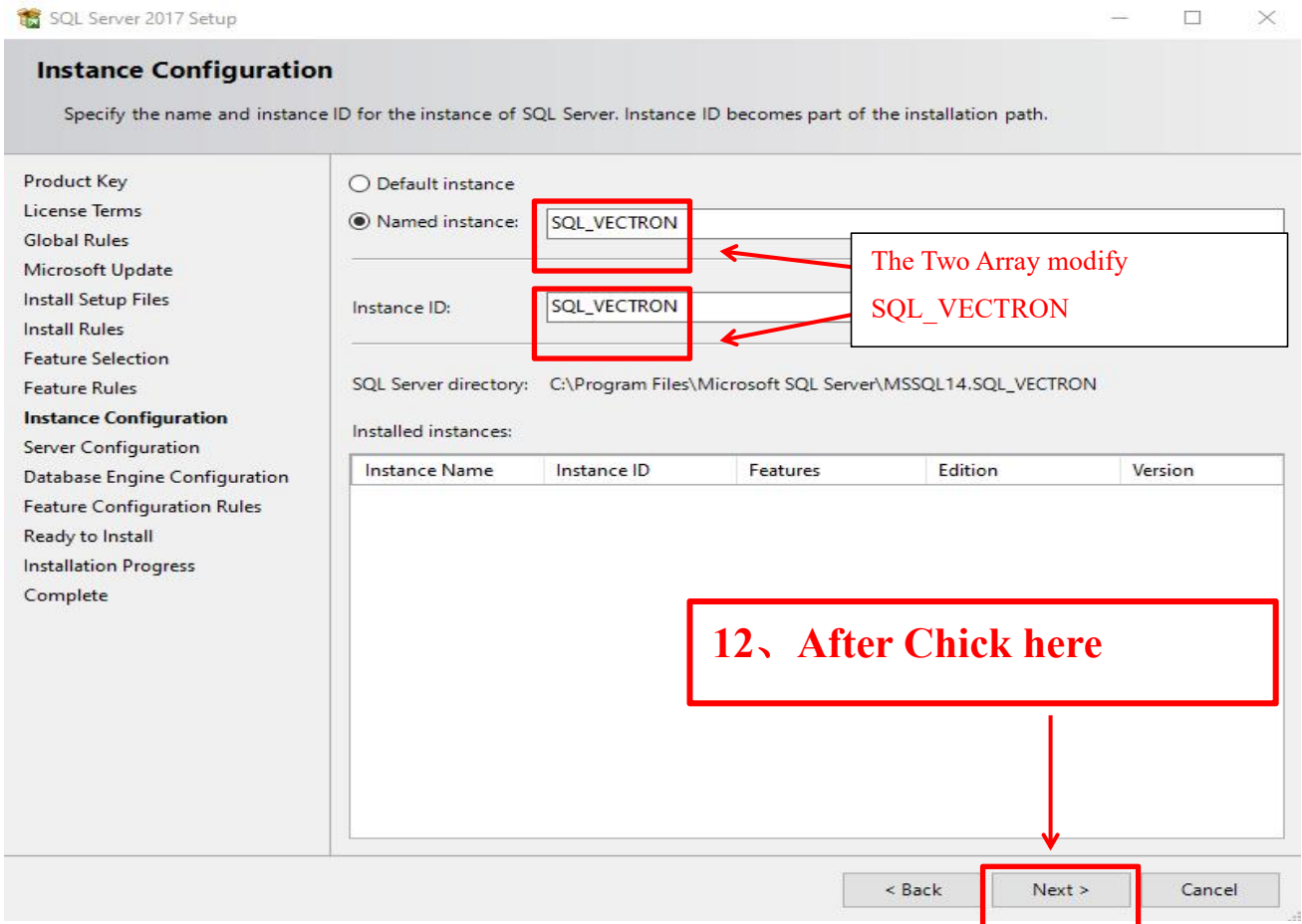
Select All Unselect All

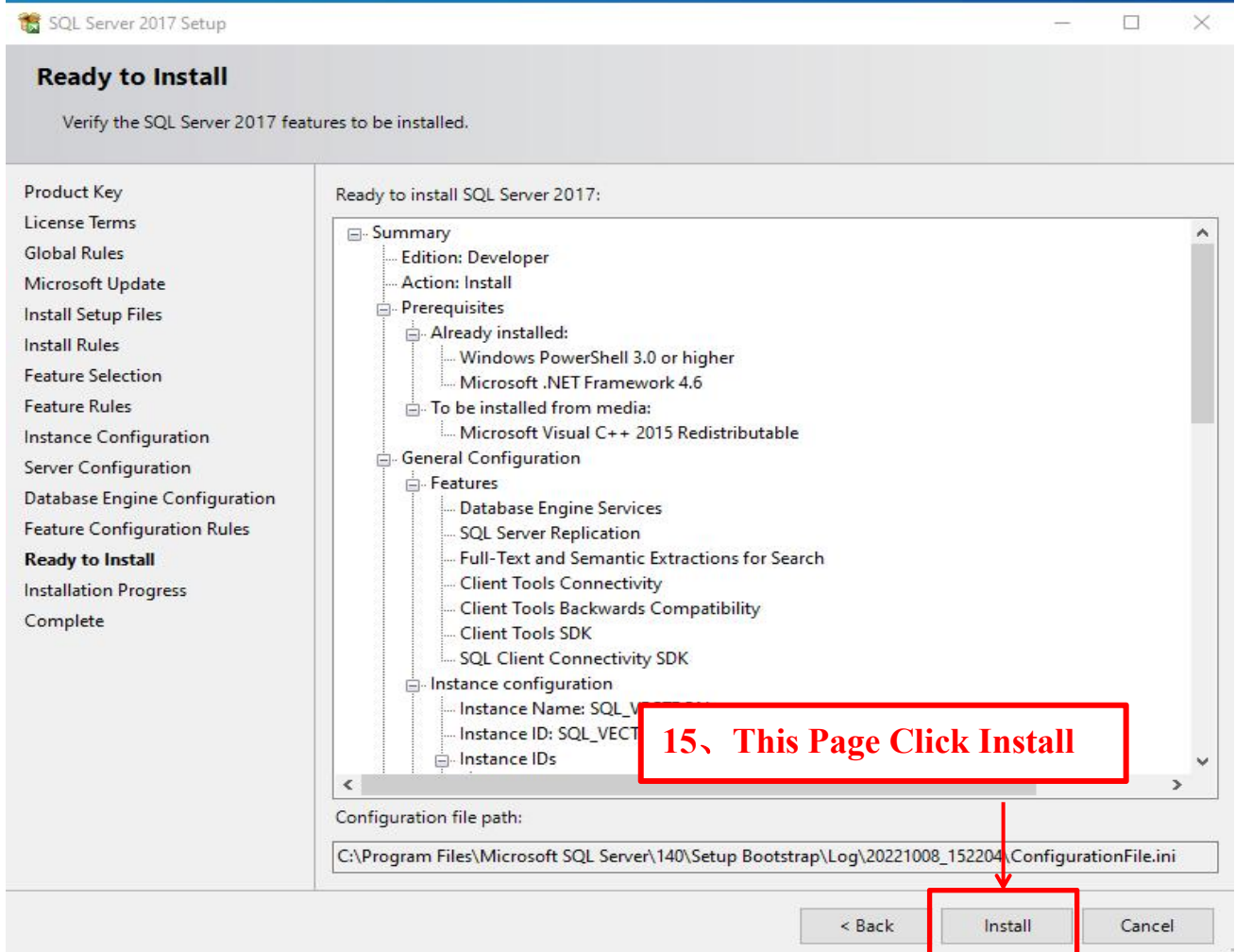
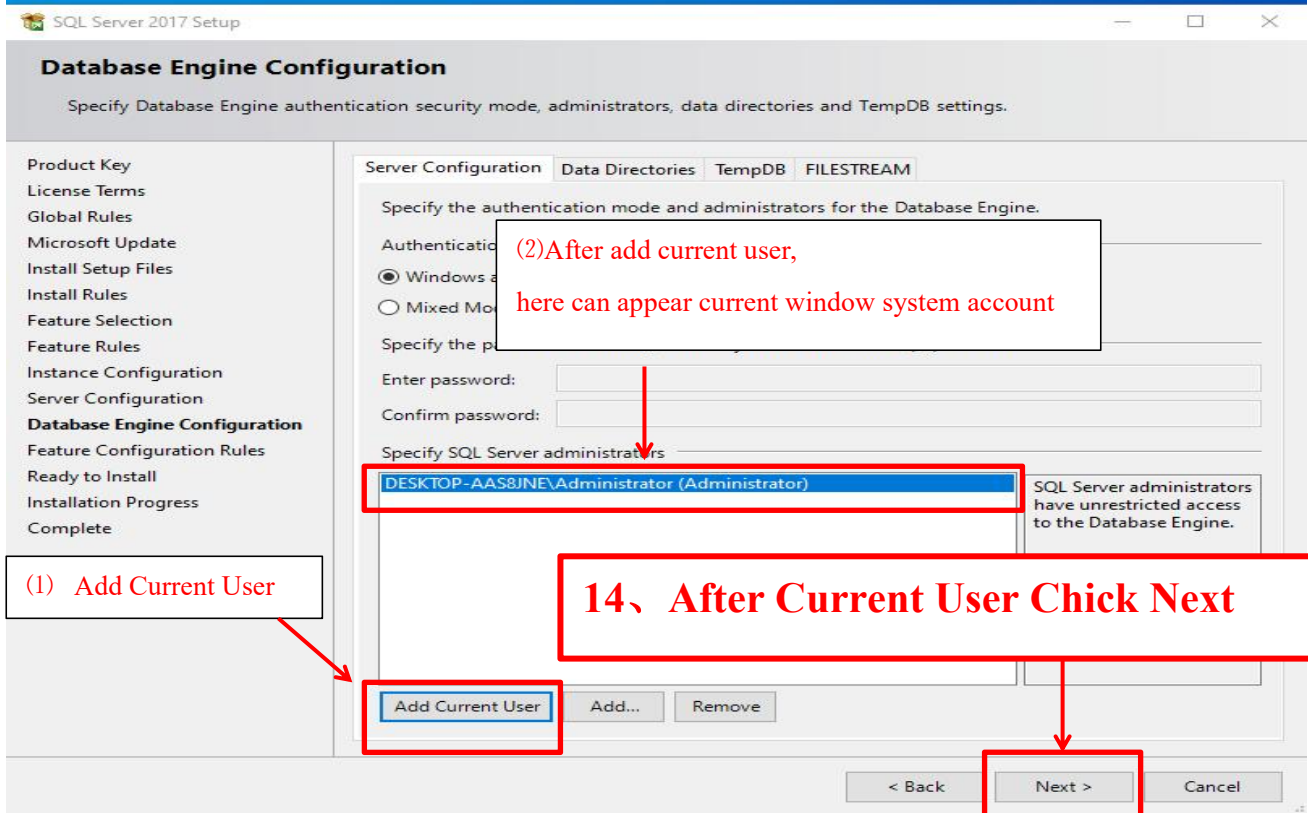
Instance root directory: C:\Program Files\Microsoft SQL Server\  
Shared feature directory: C:\Program Files\Microsoft SQL Server\  
Shared feature directory (x86): C:\Program Files (x86)\Microsoft SQL Server\

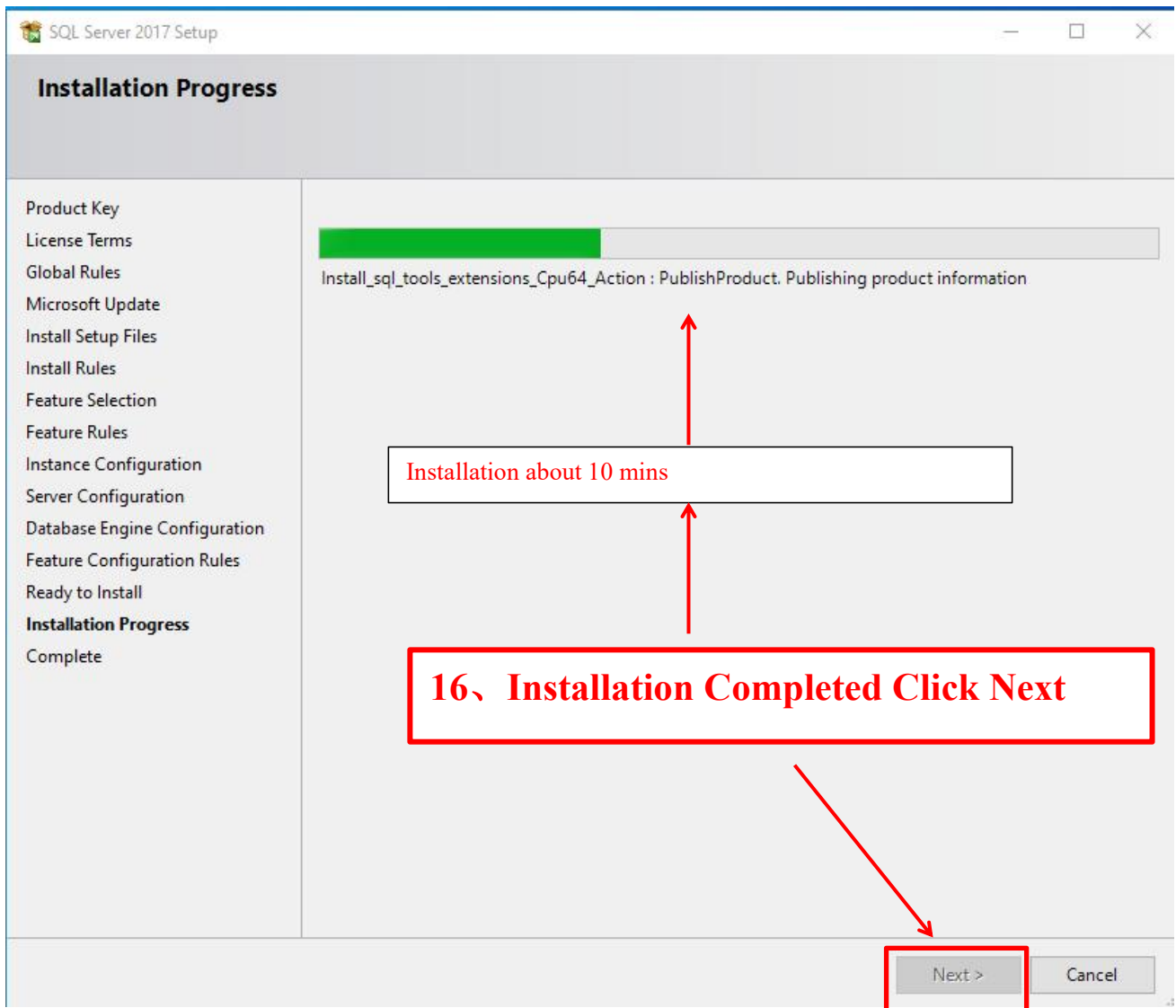
< Back **Next >** Cancel

Click optional as reference of right image

11、 After Click Here







SQL Server 2017 Setup

### Complete

Your SQL Server 2017 installation completed successfully.

- Product Key
- License Terms
- Global Rules
- Microsoft Update
- Install Setup Files
- Install Rules
- Feature Selection
- Feature Rules
- Instance Configuration
- Server Configuration
- Database Engine Configuration
- Feature Configuration Rules
- Ready to Install
- Installation Progress
- Complete**

Information about the Setup operation or possible next steps:

Feature	Status
Full-Text and Semantic Extractions for Search	Succeeded
Database Engine Services	Succeeded
SQL Server Replication	Succeeded
SQL Browser	Succeeded
SQL Writer	Succeeded
Client Tools SDK	Succeeded
Client Tools Connectivity	Succeeded
Client Tools Backwards Compatibility	Succeeded
SQL Client Connectivity	Succeeded
SQL Client Connectivity SDK	Succeeded
Setup Support Files	Succeeded

Details:

Install successful.

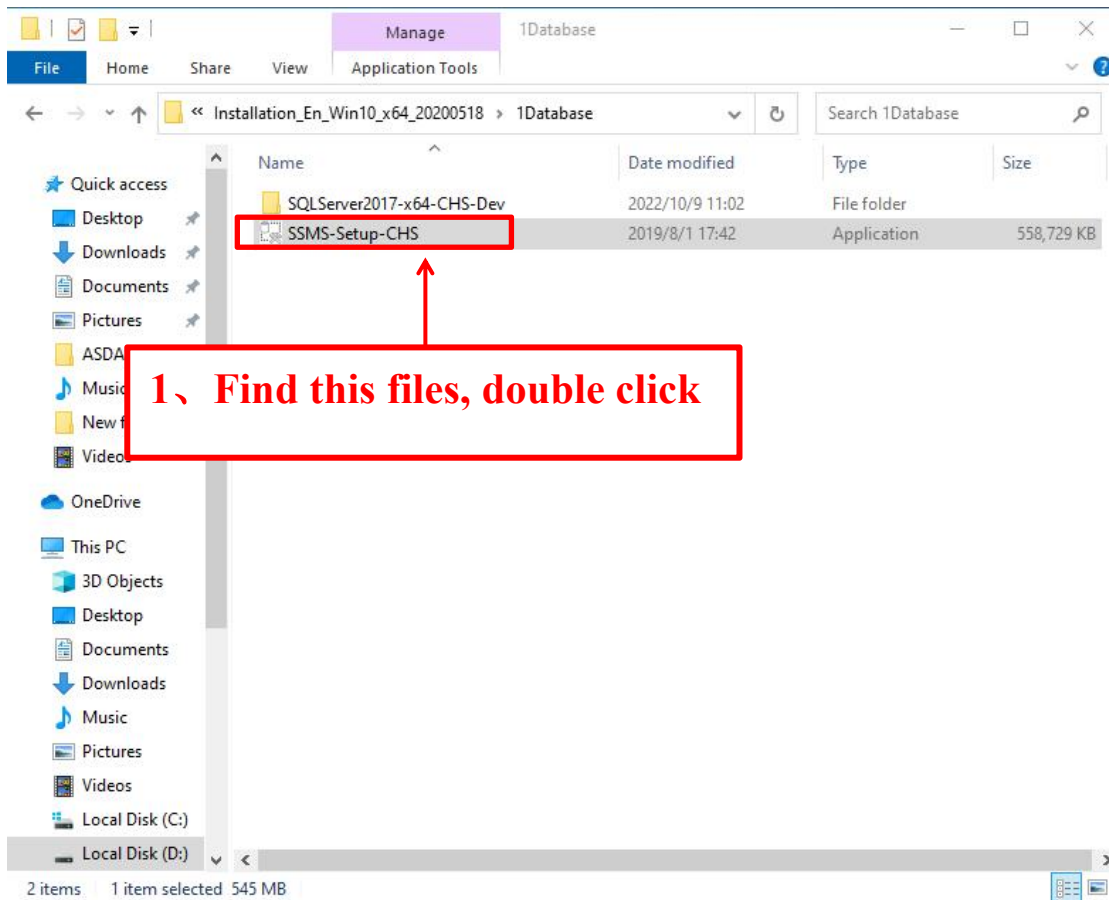
All Status are Succeeded,if appear failed please contact VECTRON

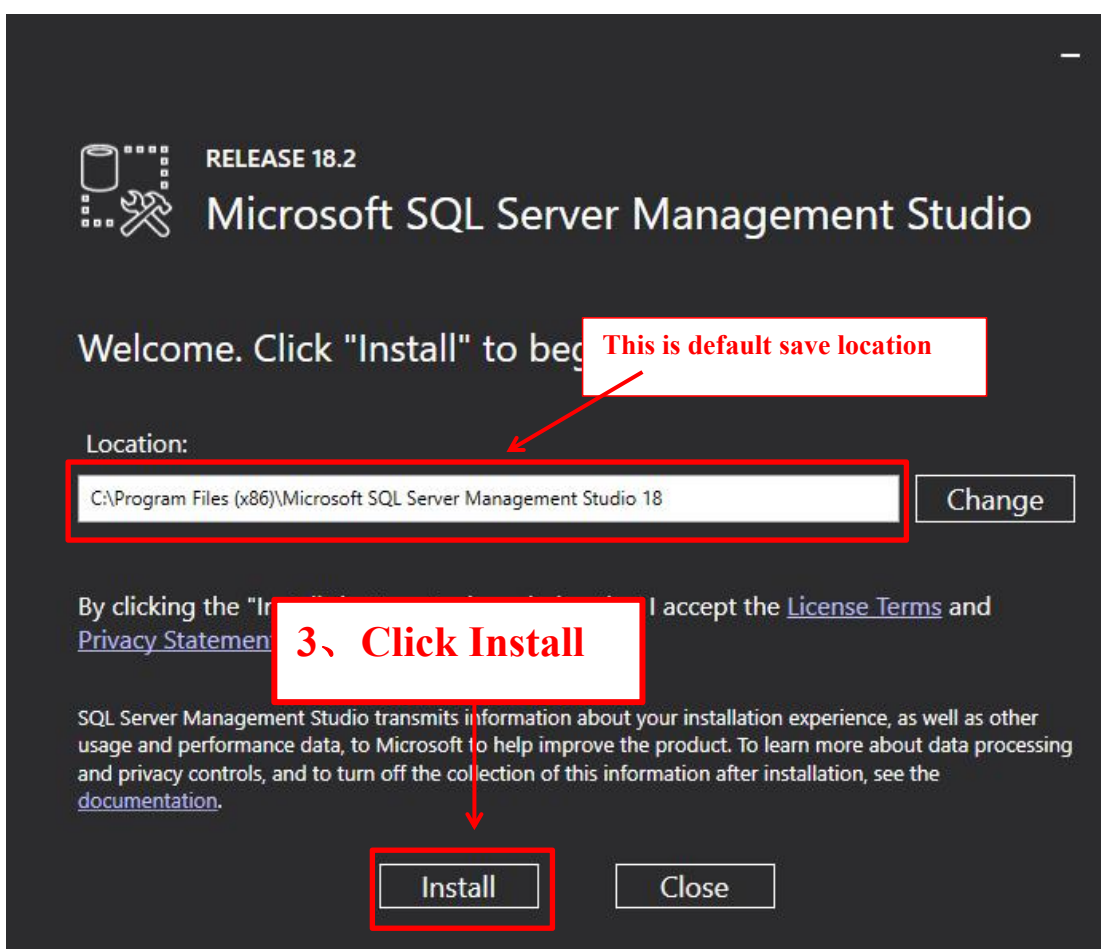
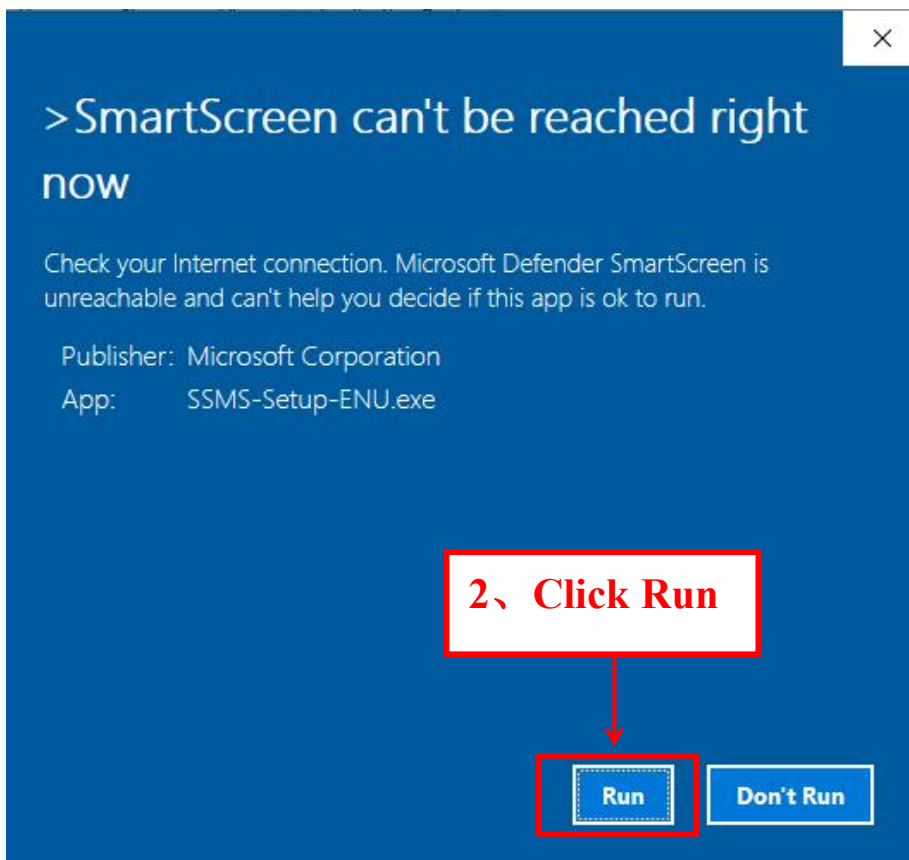
Summary log file has been saved to the following location:  
[C:\Program Files\Microsoft SQL Server\140\Setup Bootstrap\Log\20221008\\_152204\Summary\\_DESKTOP-AAS8JNE\\_20221008\\_152204.txt](C:\Program Files\Microsoft SQL Server\140\Setup Bootstrap\Log\20221008_152204\Summary_DESKTOP-AAS8JNE_20221008_152204.txt)

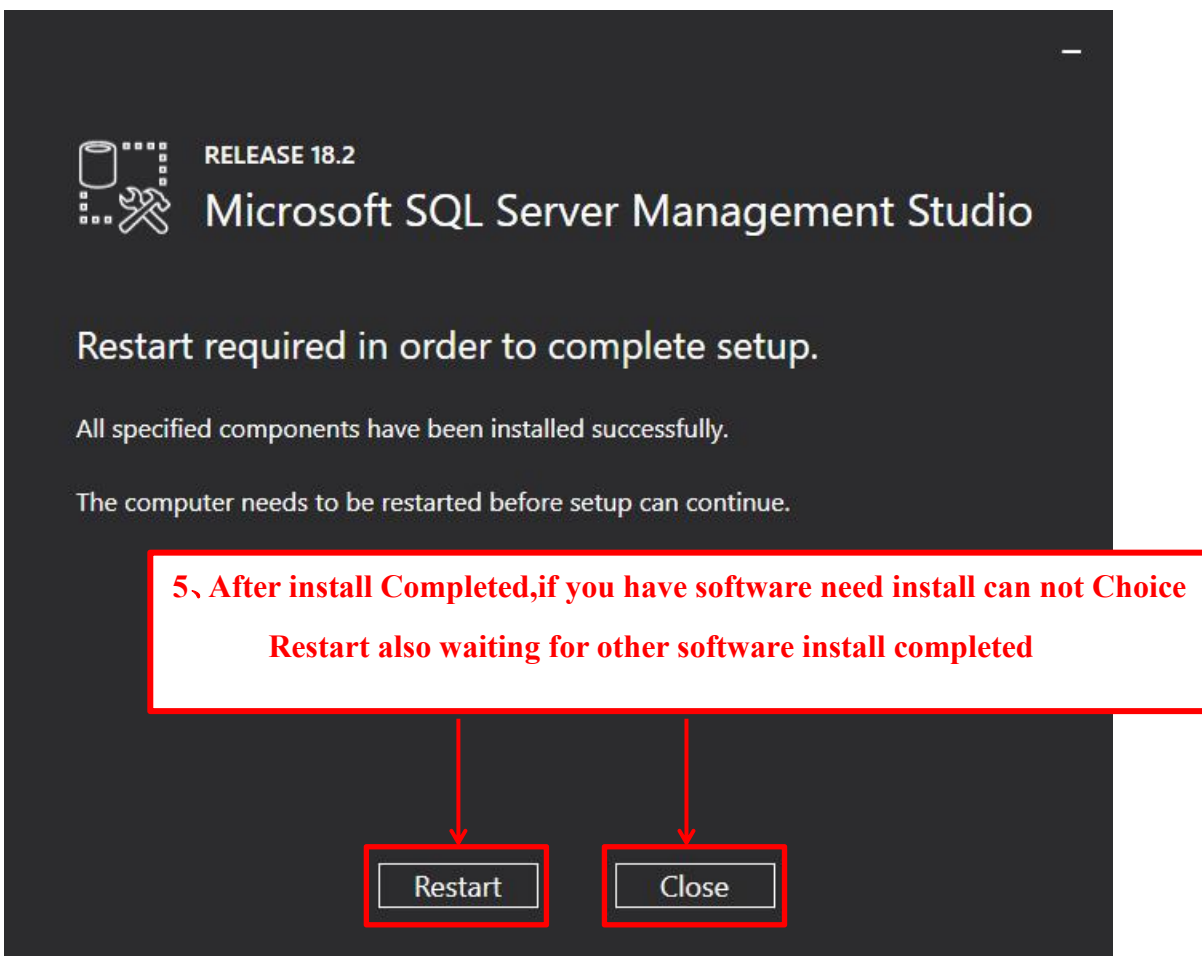
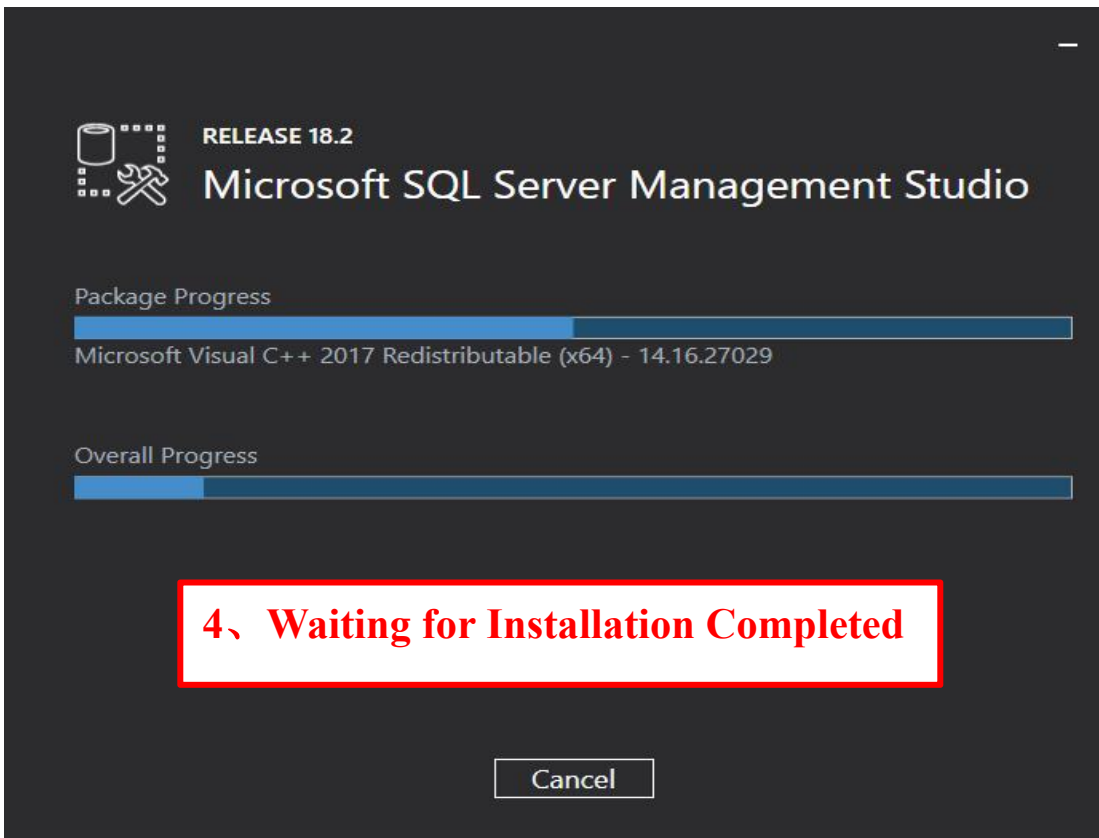
Close

**17、 Installation Completed, Close**

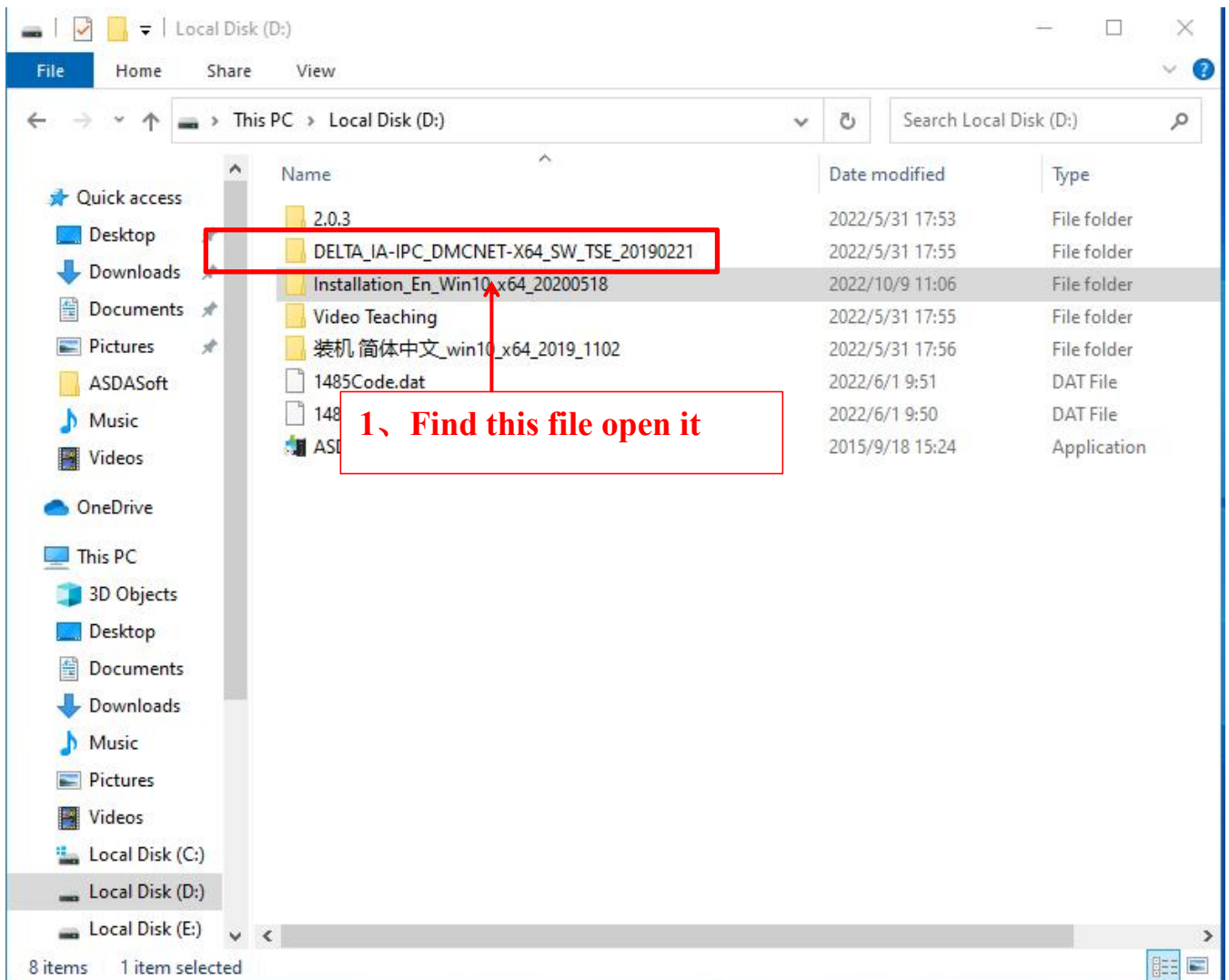
## Part 2 Database Management Tool Installation

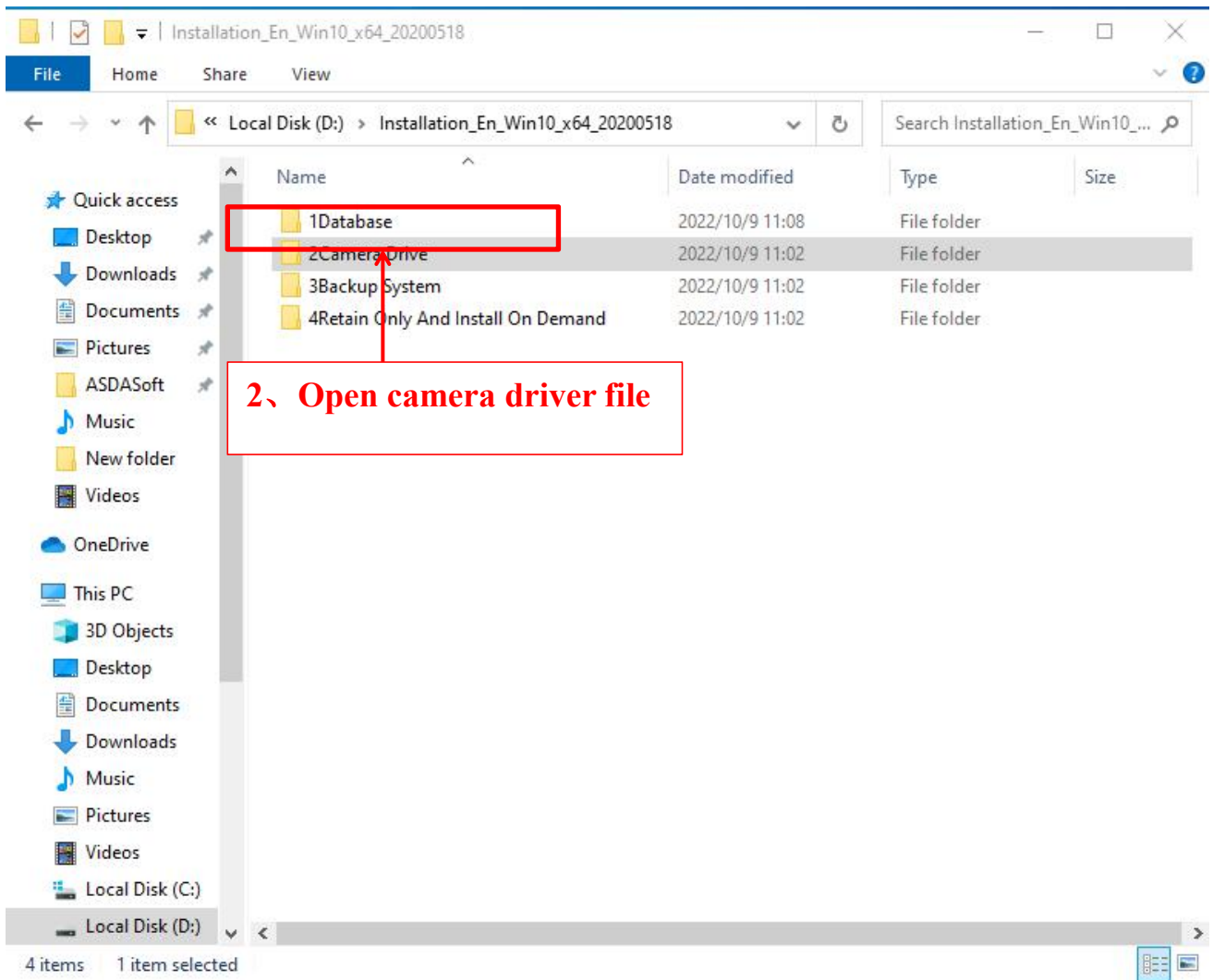


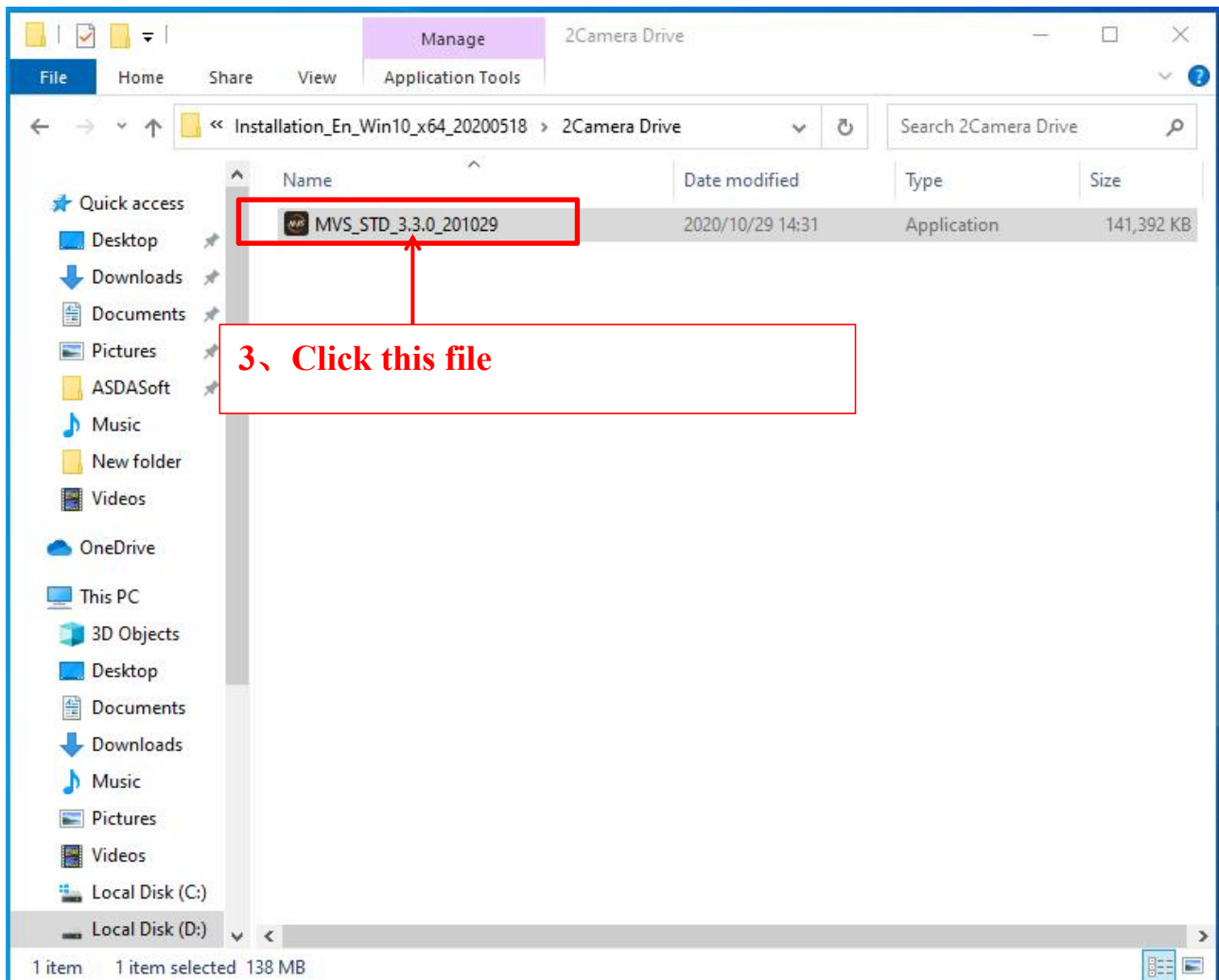


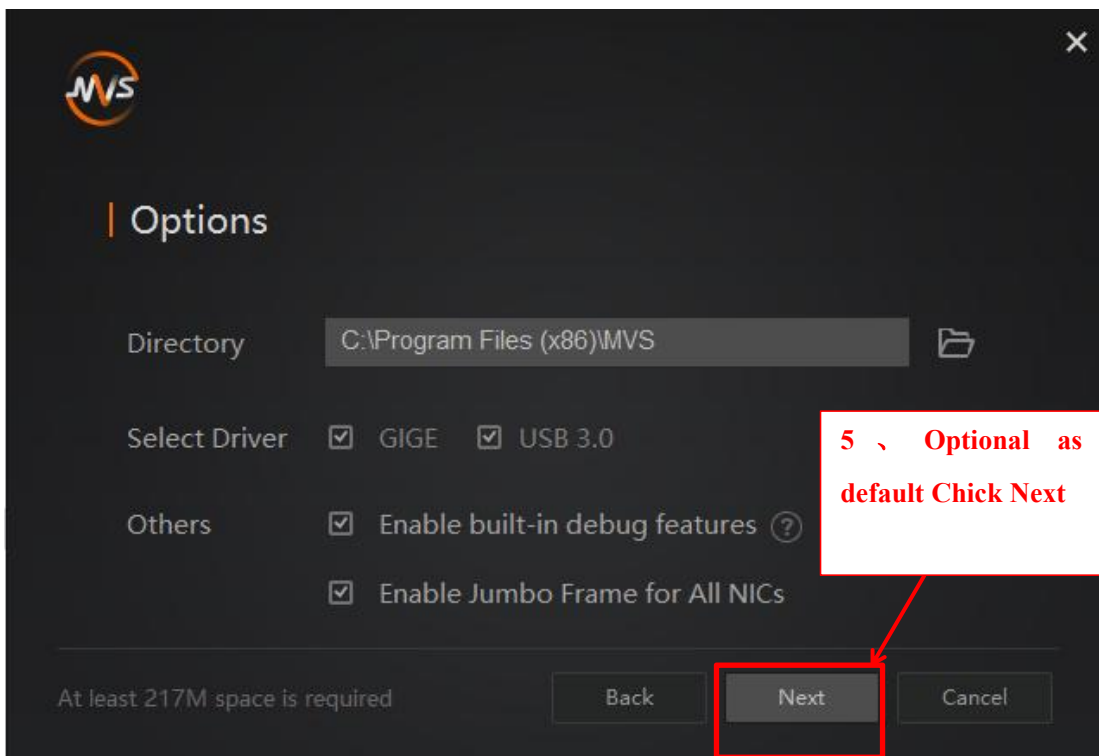


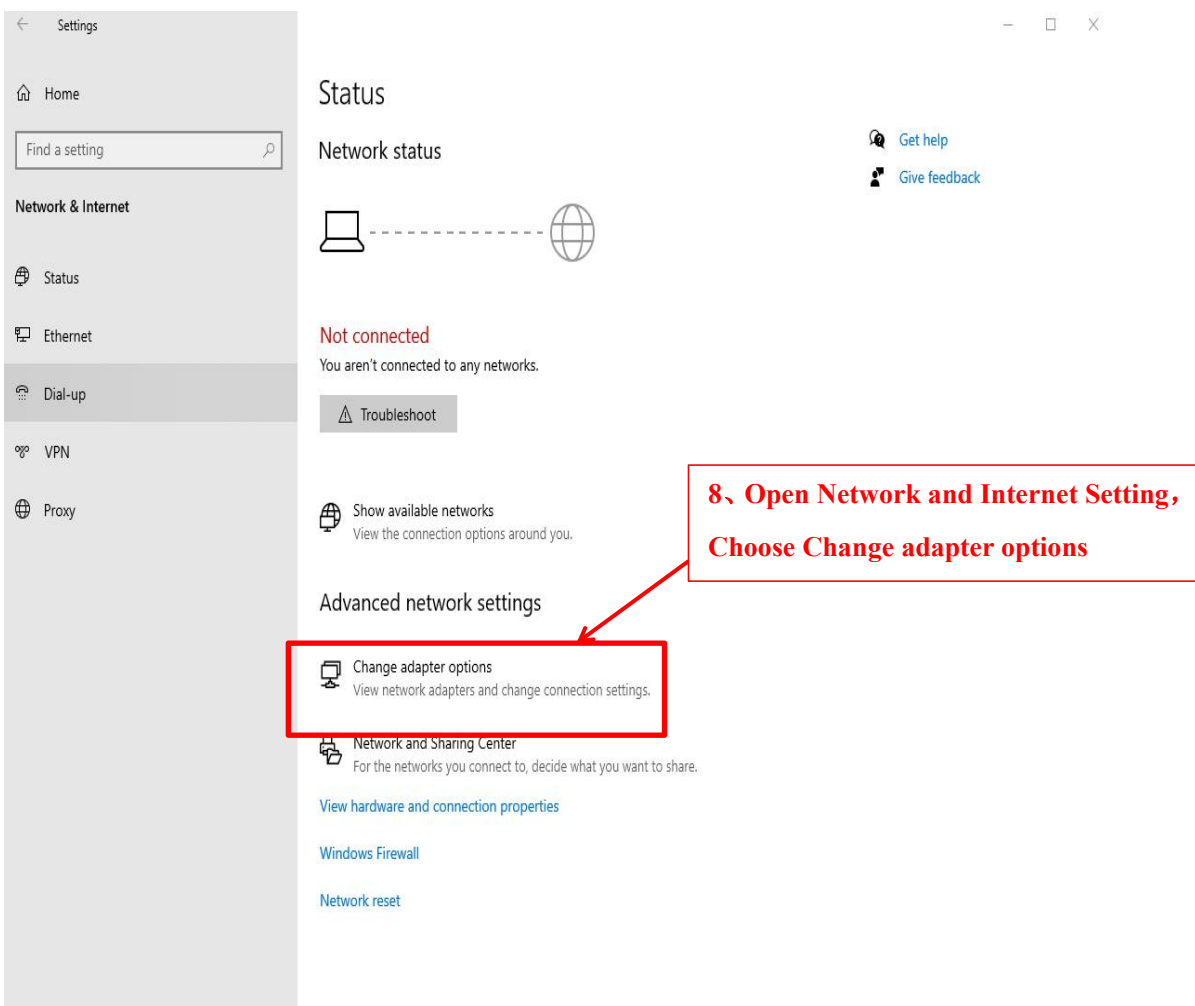
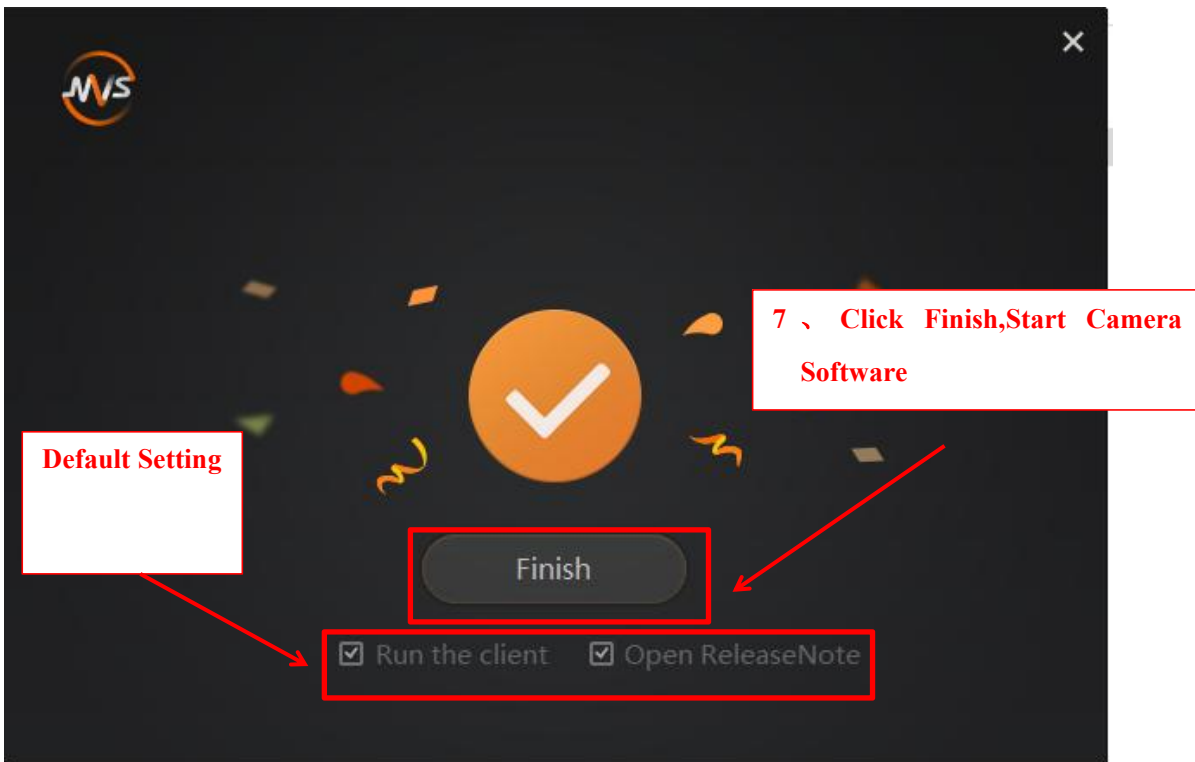
## Part 3 Camera Driver Software Installation

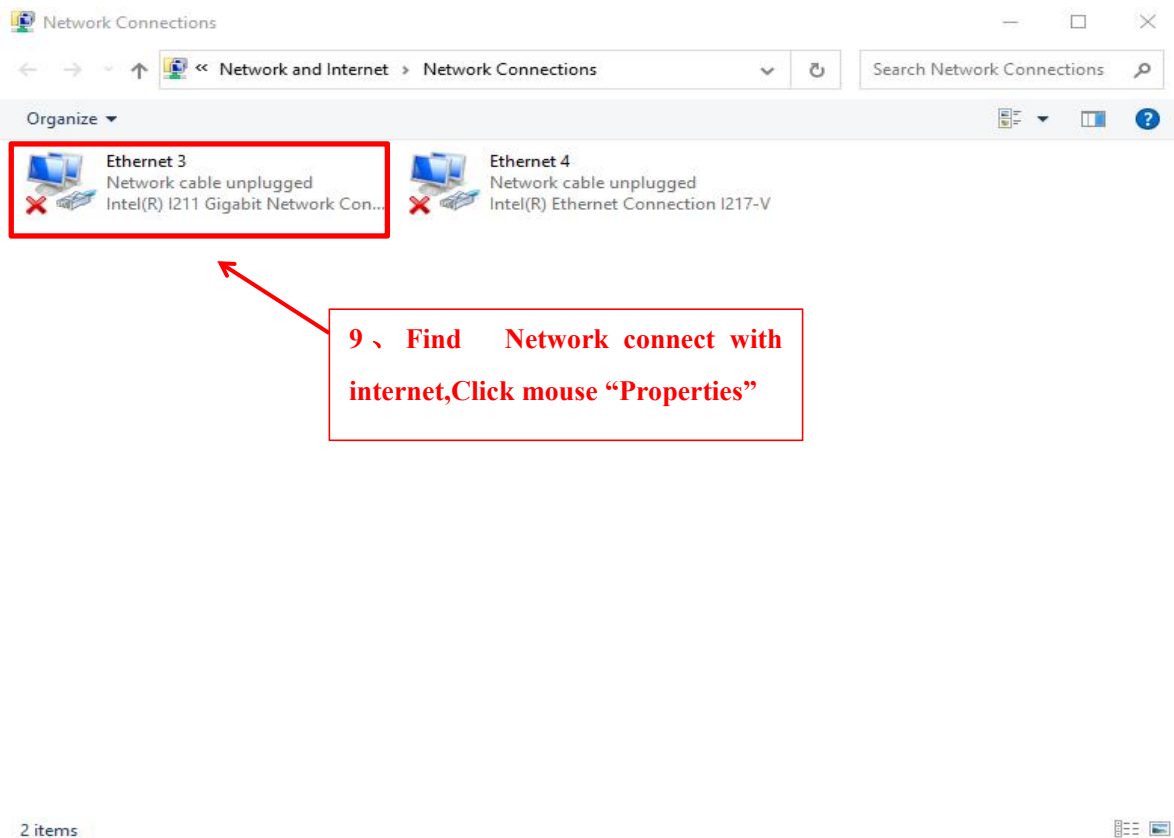




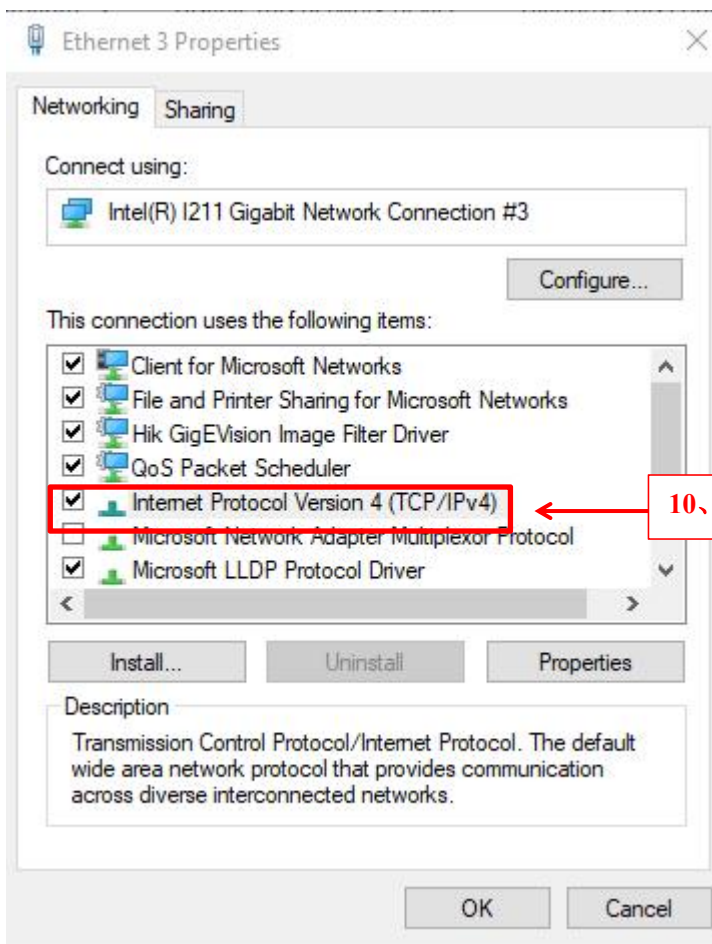




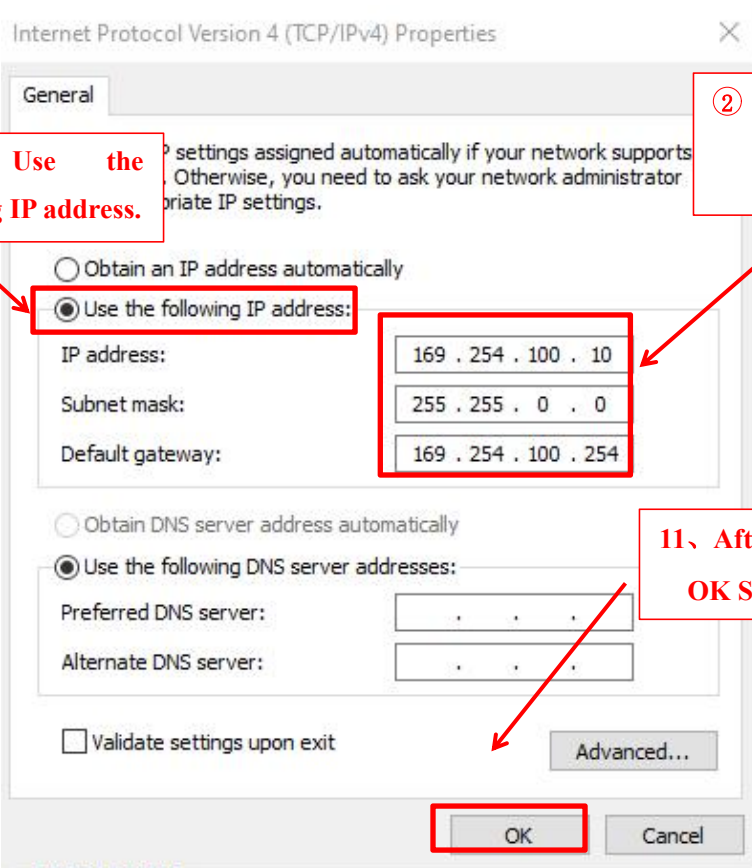




**9、 Find Network connect with internet,Click mouse “Properties”**



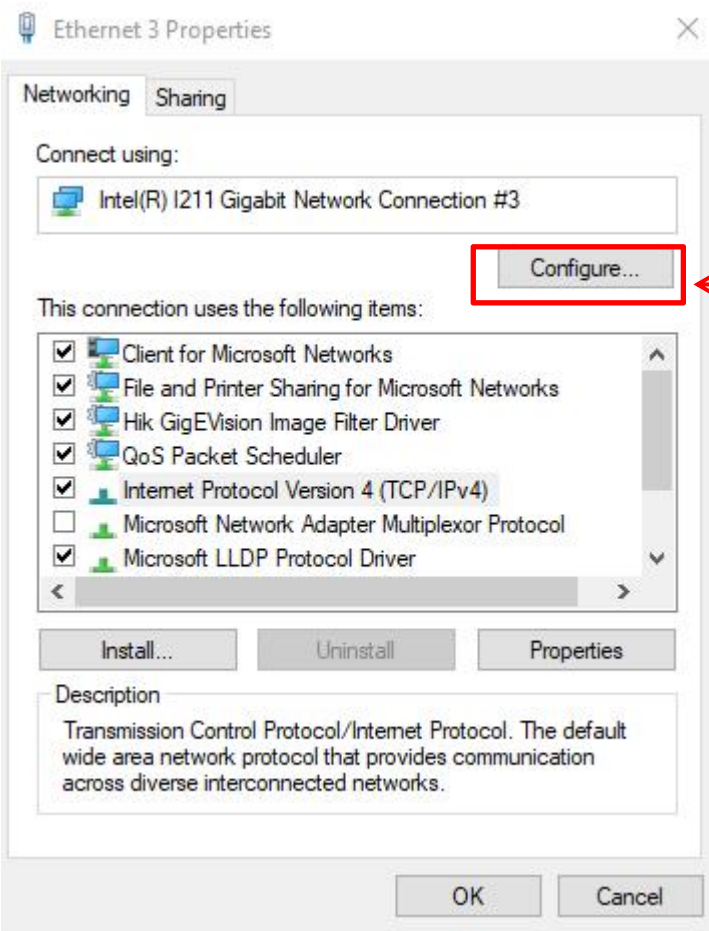
**10、 Open IPv4 Setting**



Select Use the following IP address.

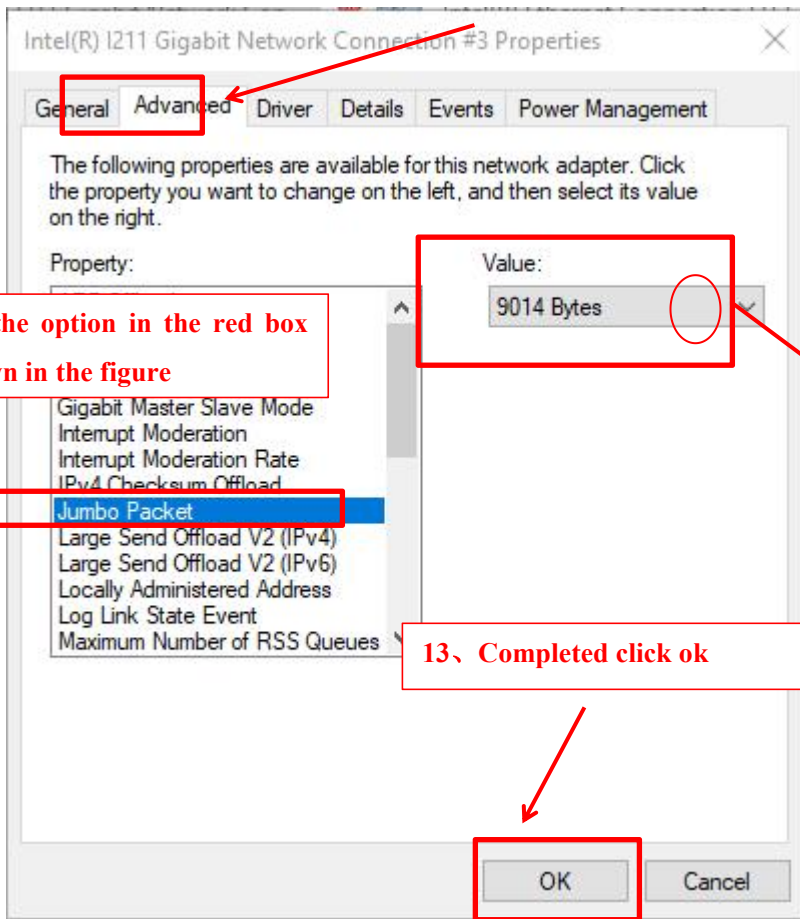
② Set the same IP address as shown in the figure

11、 After setting IP Click OK Save



12、 Choose Configure

① Choose Advance



③ Select the option in the red box as shown in the figure

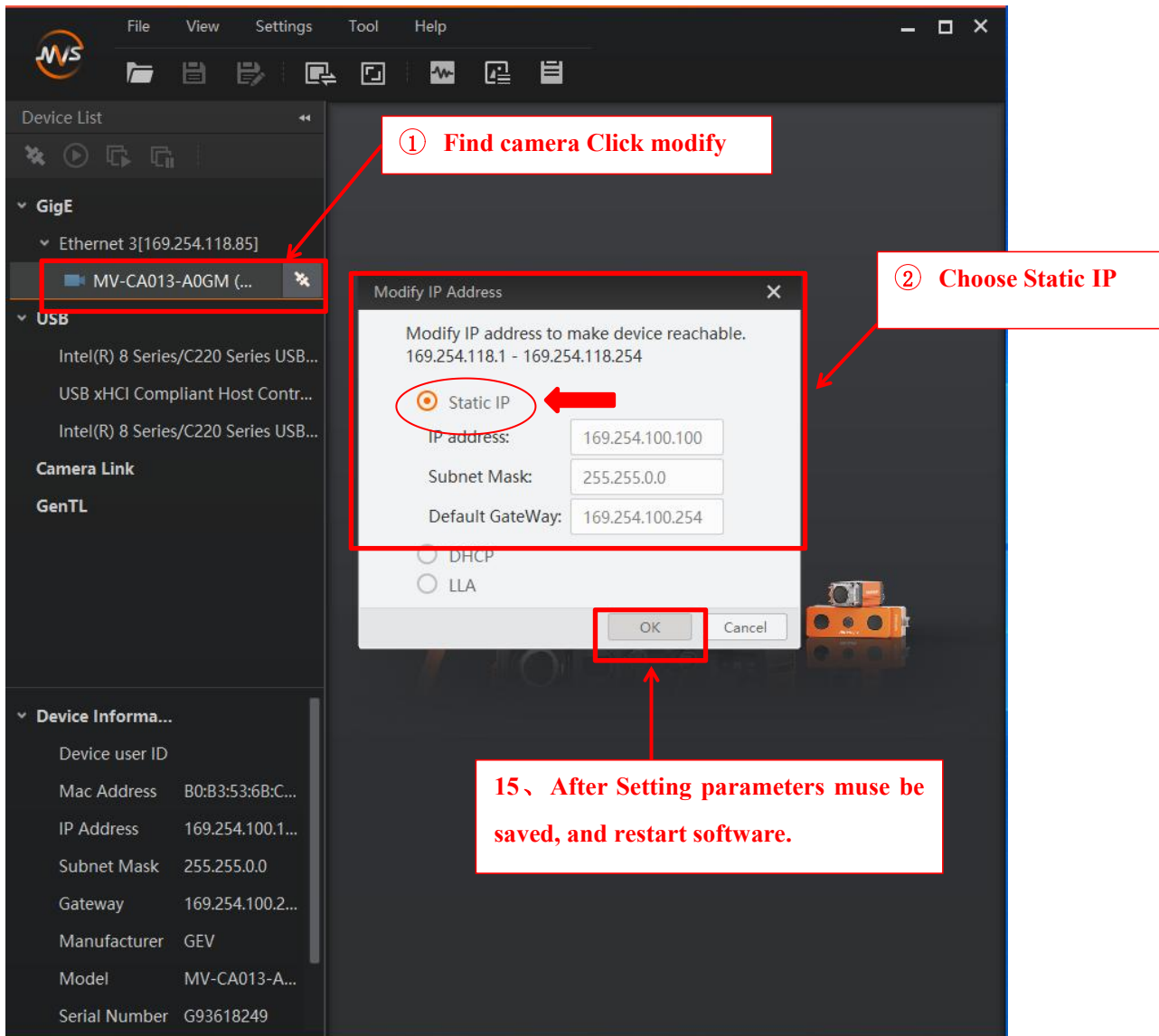
④ Select the one with the largest value in the list, as the figure 9014 Bytes

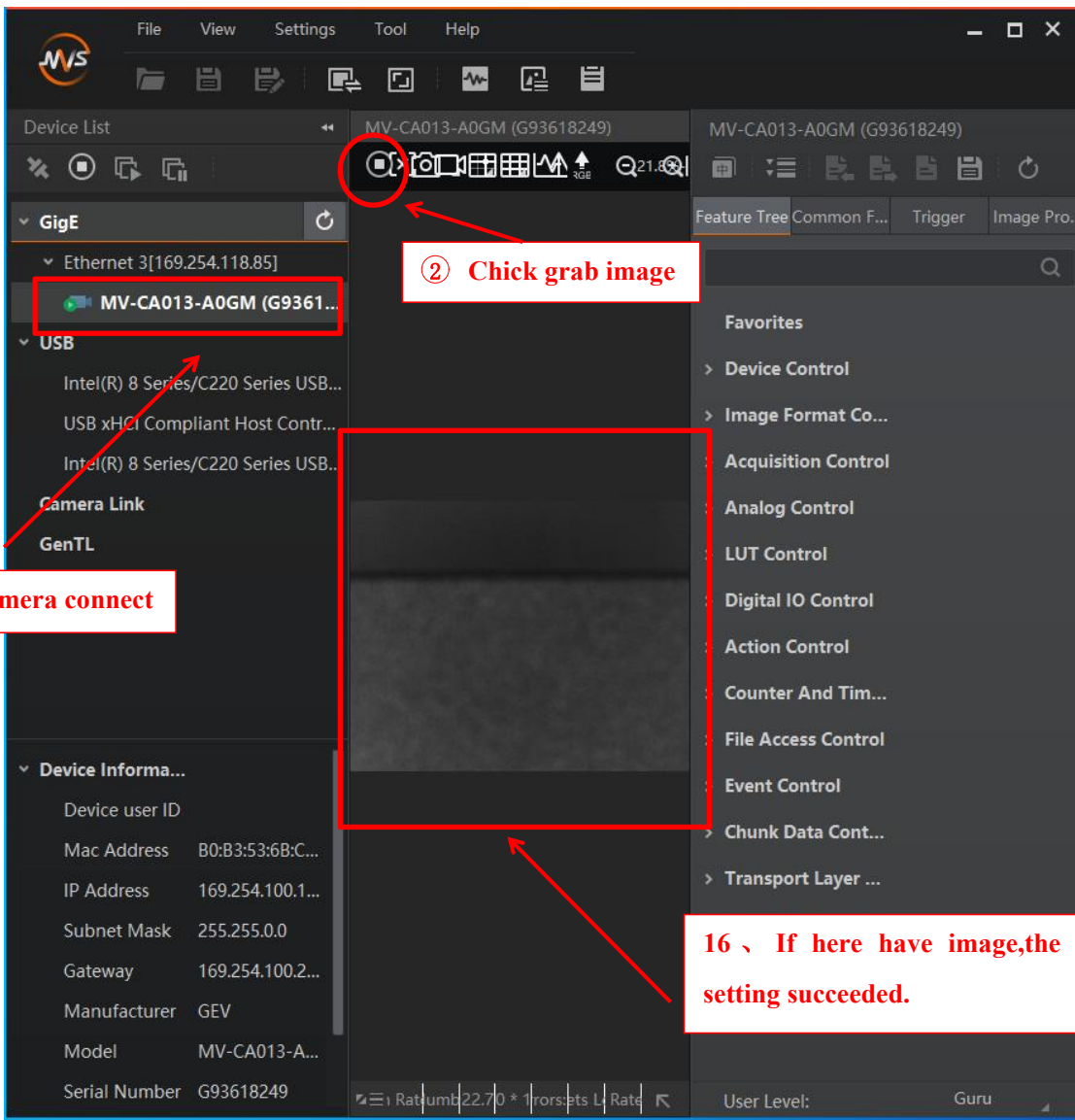
13、Completed click ok

③

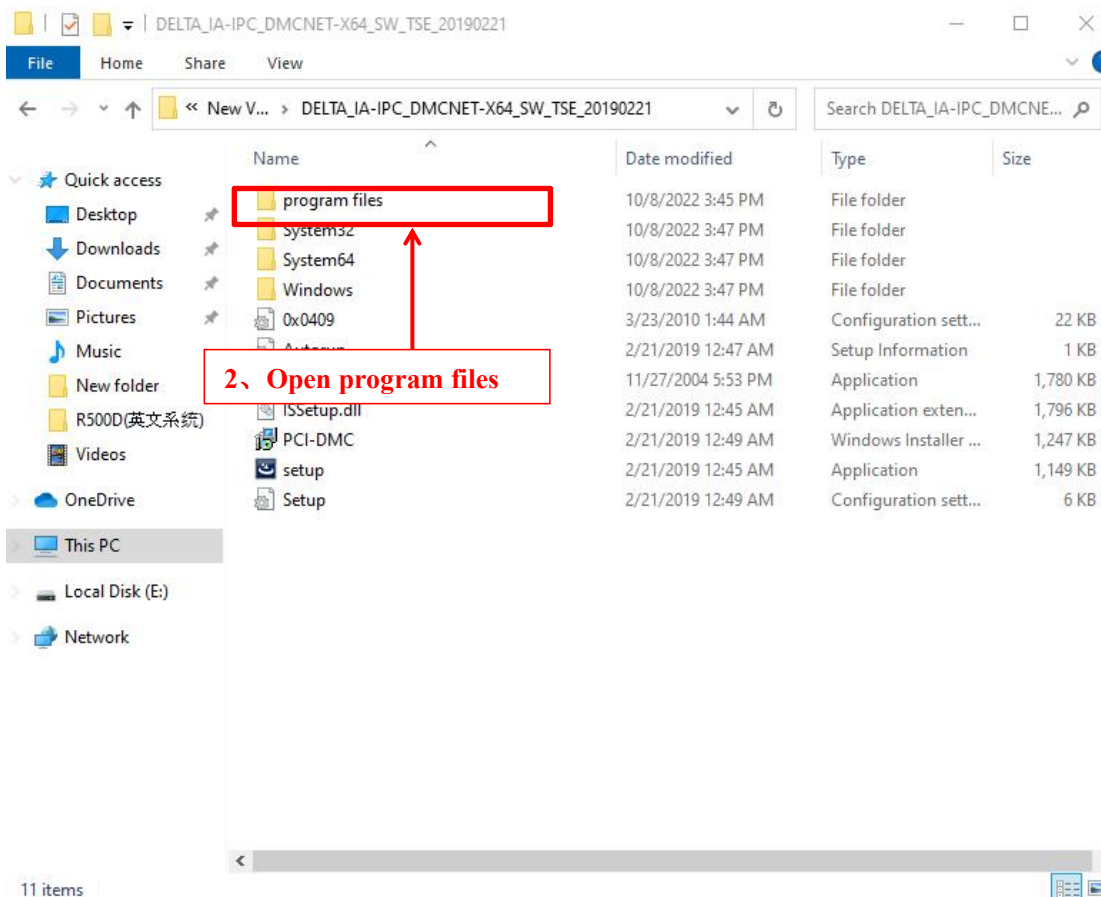
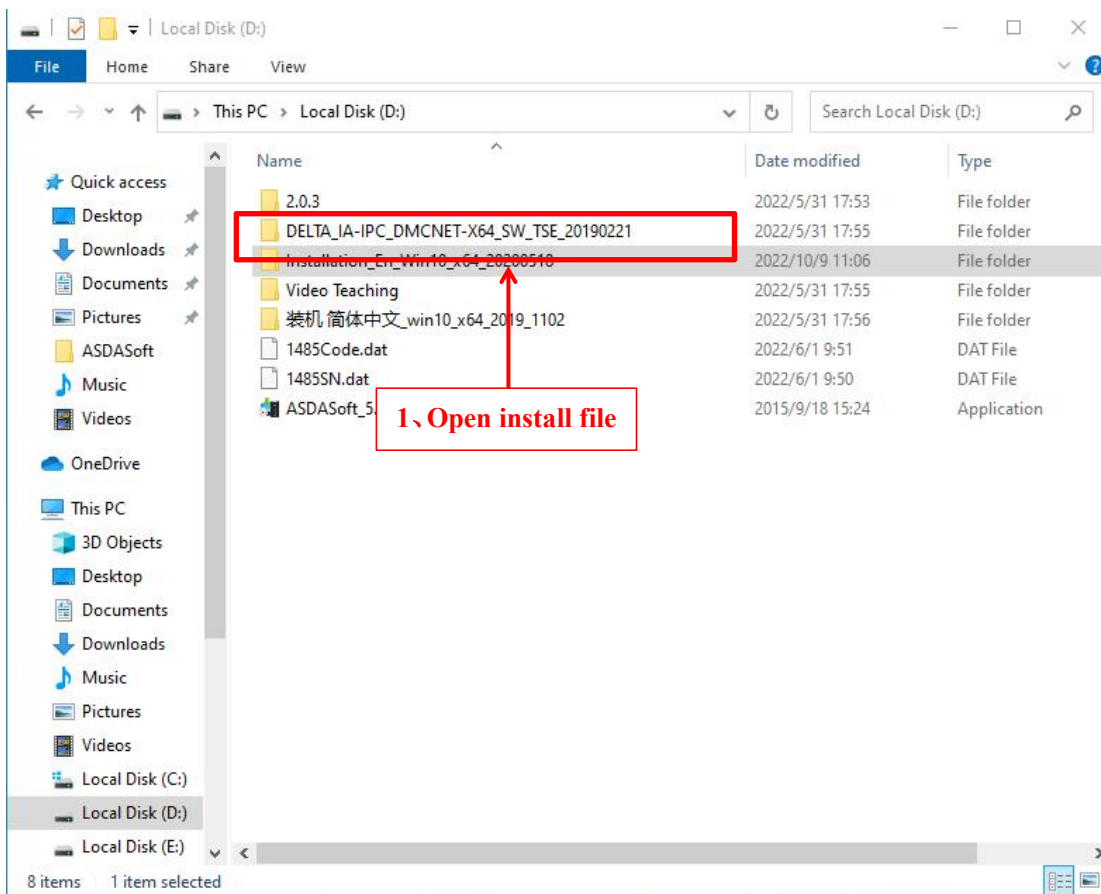


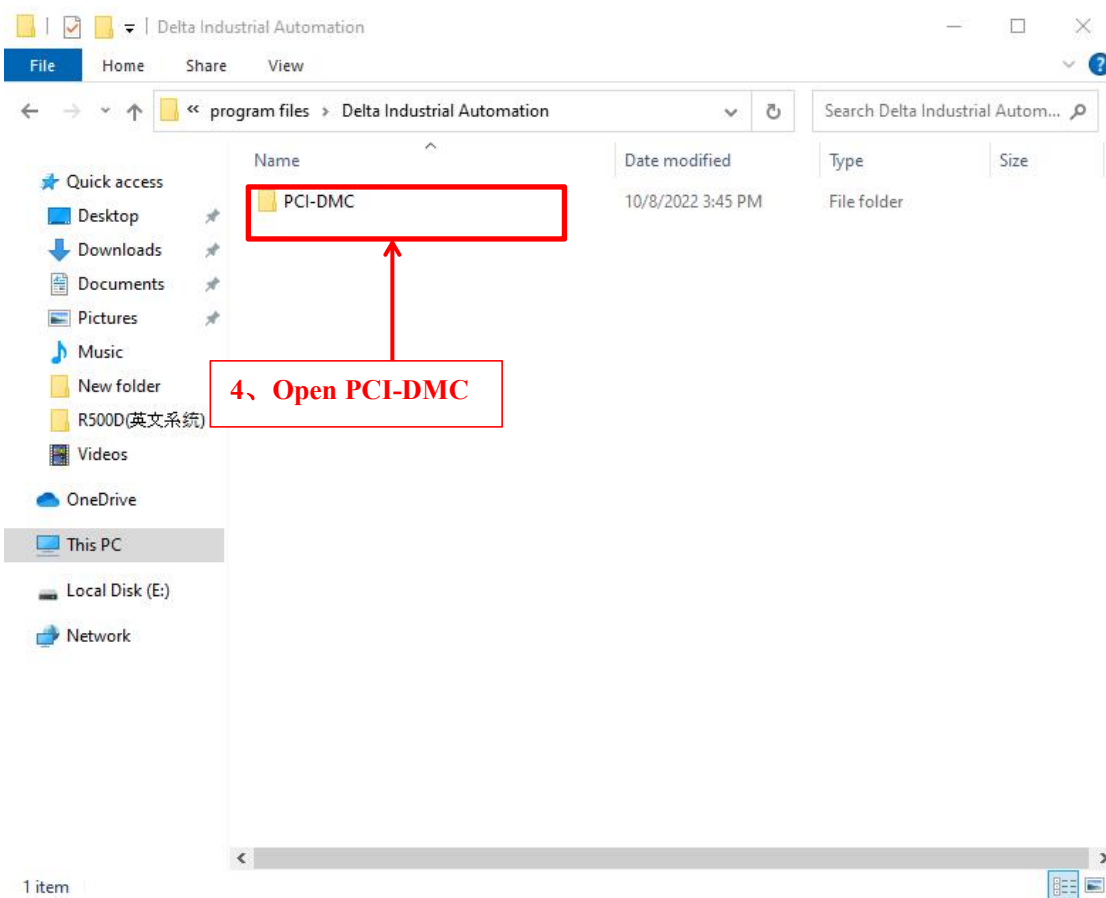
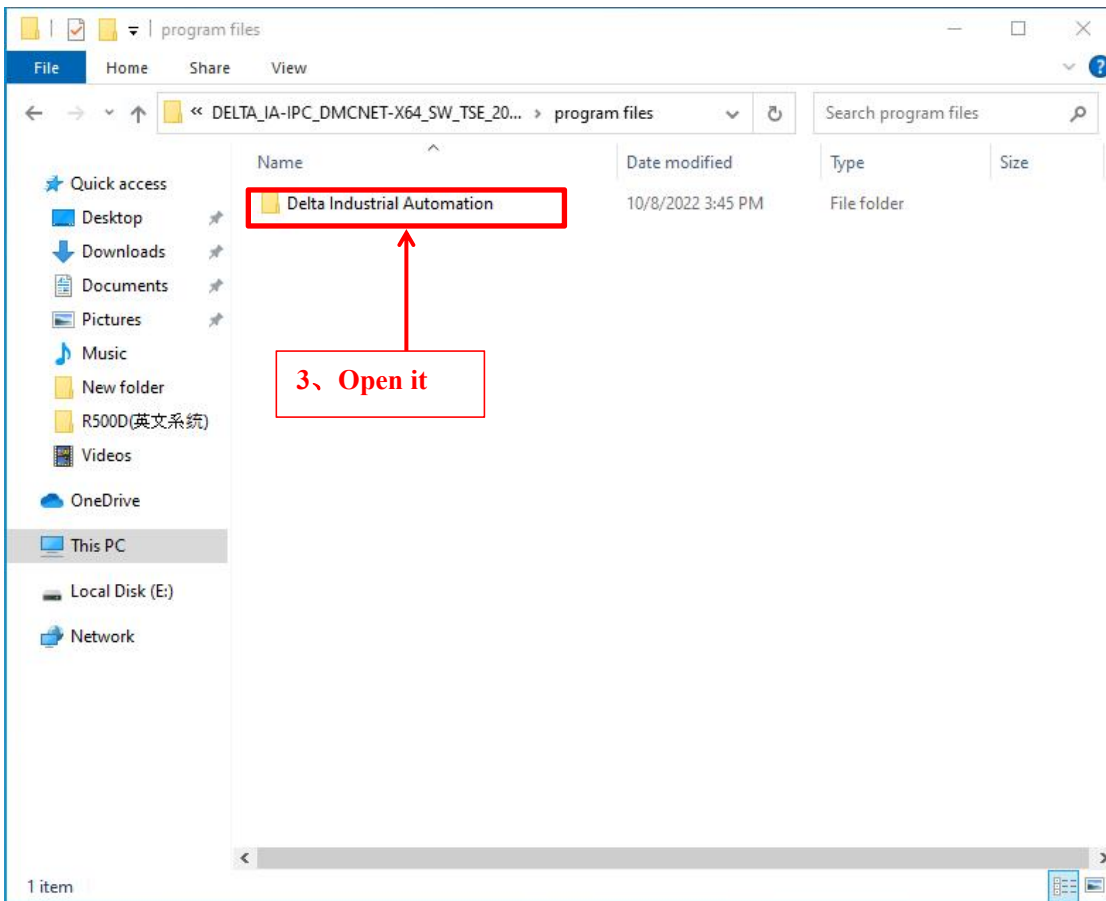
14、 Back to Computer desk start Camera Software

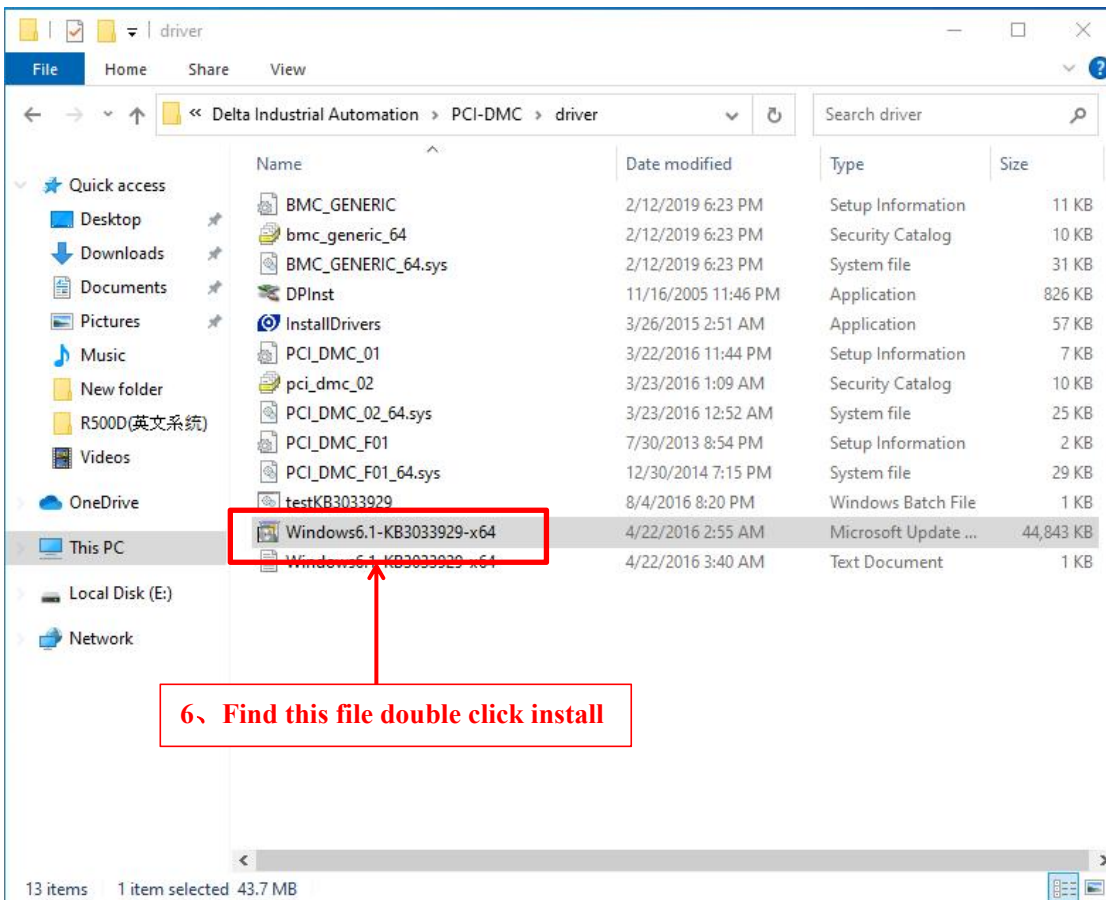
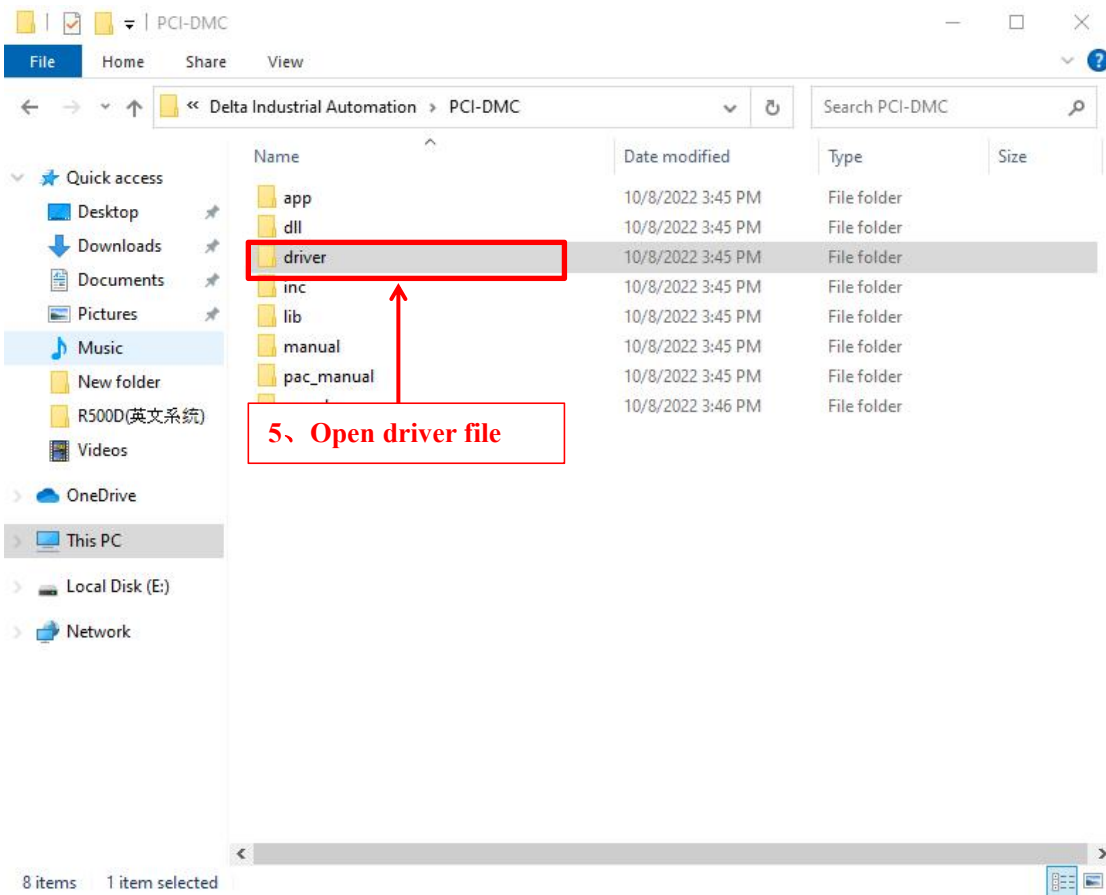


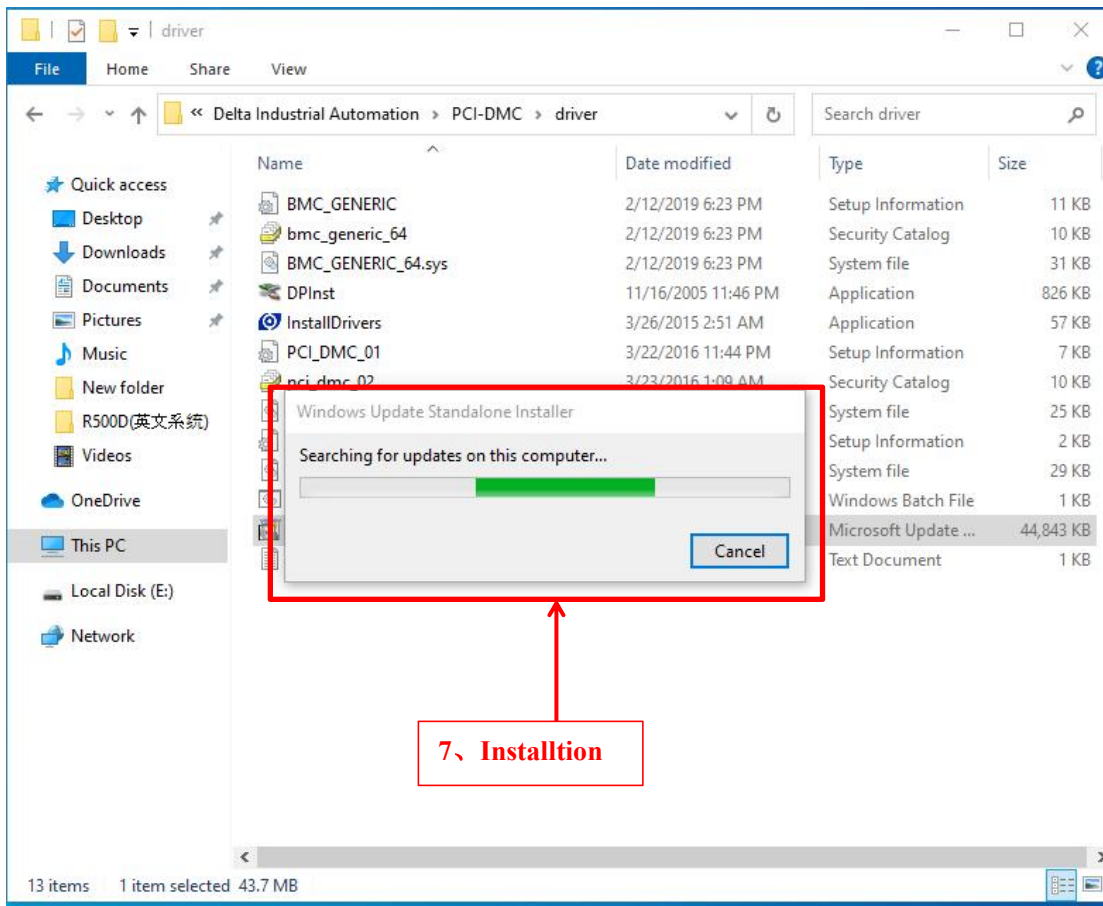


## Part4 Motion Control Card Installation

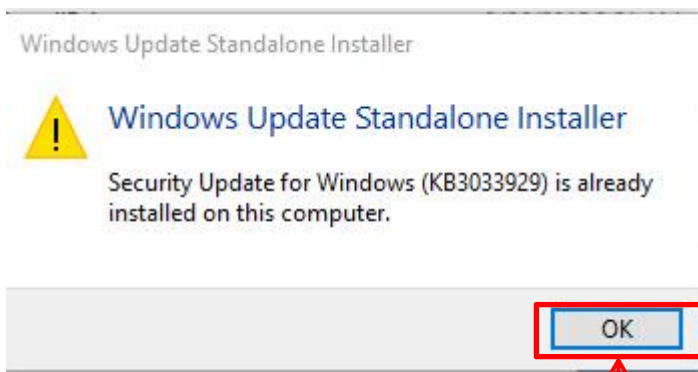








7、Installtion



8、Completed install click ok

