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TroCutCAD User Manual



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User Manual

By reading this instruction, the users will know the basic operation of TroCutCAD.

For Who

This manual is applicable to engineers who have a certain understanding of mechanical automation.

Main Content

The particular use and operation of TroCutCAD.

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1. Introduction

TroCutCAD is Trocen Oscillating Tool Cutting Controller System specialized windows version software. This manual will explain how to use the software to complete machining task in detail. The TroCutCAD runs on Windows system (Windows XP/Vista/Win7/Win8/Win10).

Software Features

- Friendly interface, easy to learn, simple to operate.
- Support CorelDraw direct output version, AutoCAD direct output version.
- Compatible with AI、PLT、DXF、SVG、PDF、NC、DST、DSB、UD6、BMP、GIF、JPG、JPEG、PNG formats.
- Draw simple graphics, characters and edit/compose the imported data.
- Process by layers and define output sequence.
- Multiple functions of Path Optimization and pause during working.
- Function of estimating working time and cost budget.
- Array output, immediate output and go-back-to-origin output.
- Set the working start point, working path, go-back position of cutting head according to different requirement.
- Compatible with multiple communication modes, USB communication and network communication.

2. TroCutCAD Installation

1. Access to installation directory.

Figure2-1 Installation Directory

AWCCfg	2018/11/27 15:20	文件夹	
AWCDoc	2018/11/27 15:20	文件夹	
AWCLanguage	2018/11/27 15:34	文件夹	
AWCRes	2018/11/27 15:20	文件夹	
Setup.exe	2018/11/27 15:41	应用程序	94,625 KB
SetupCfg.ini	2018/11/20 16:09	配置设置	1 KB

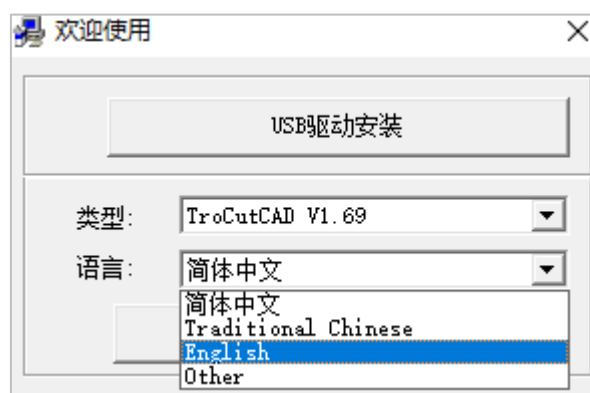
2. Double click Setup.exe.

Figure2-2 Installation Interface



3. Click Language and choose English. Click 【Install】 .

Figure2-3 Set Language



Click **【Browse】** to choose installation path and click **【OK】** to start to install.

Figure2-4 Choose TroCutCAD Version

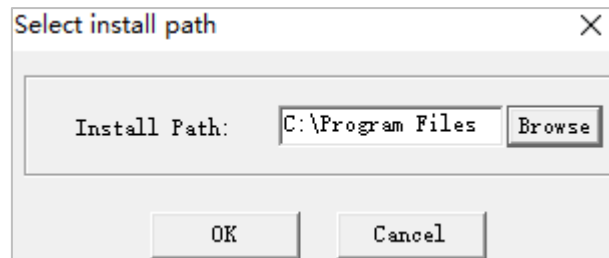
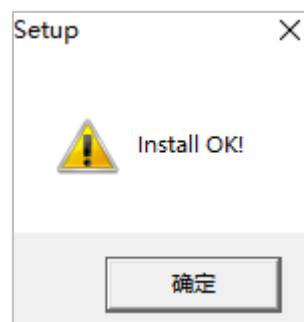


Figure2-6 Install OK



4. Install USB driver. Press **【Install USB Driver】**.

Figure2-7 Install USB Driver

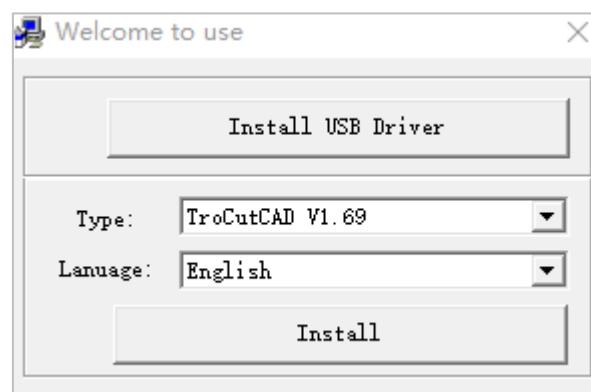


Figure2-8 FTDI Driver Installation

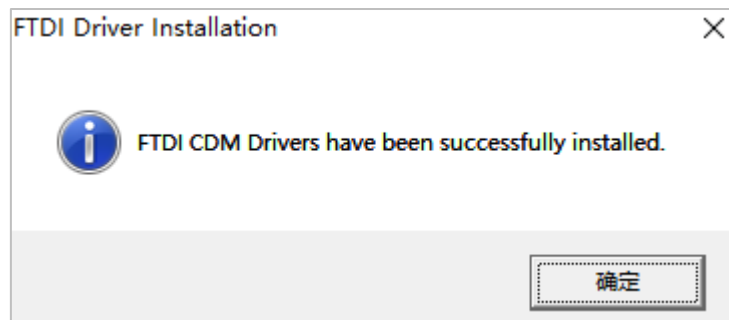


Figure2-9 Install Wizard

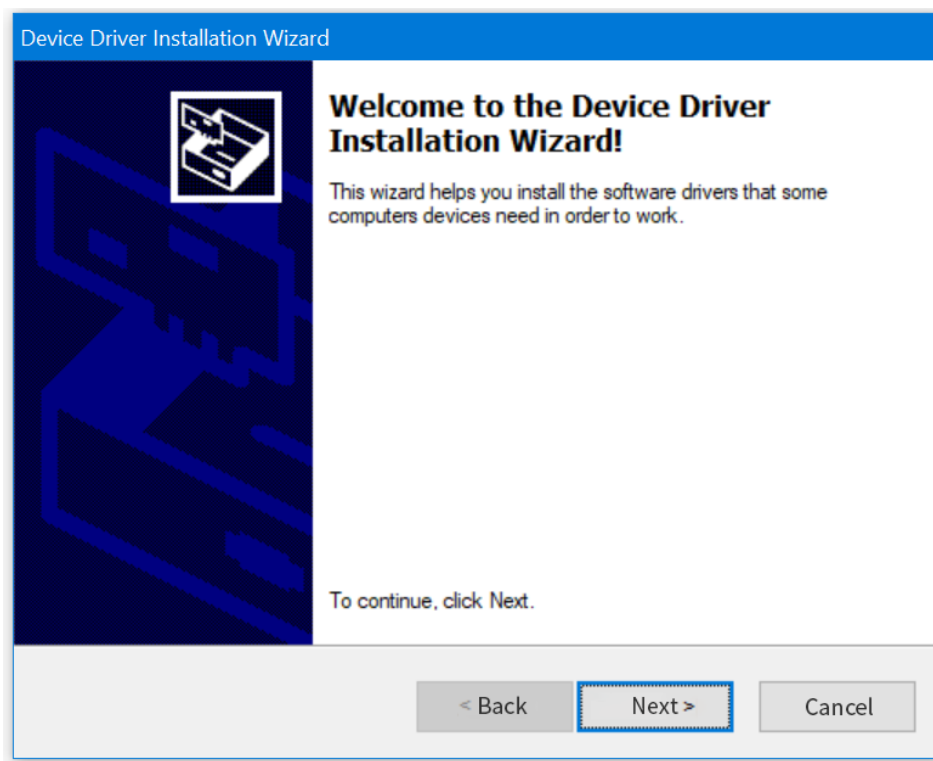
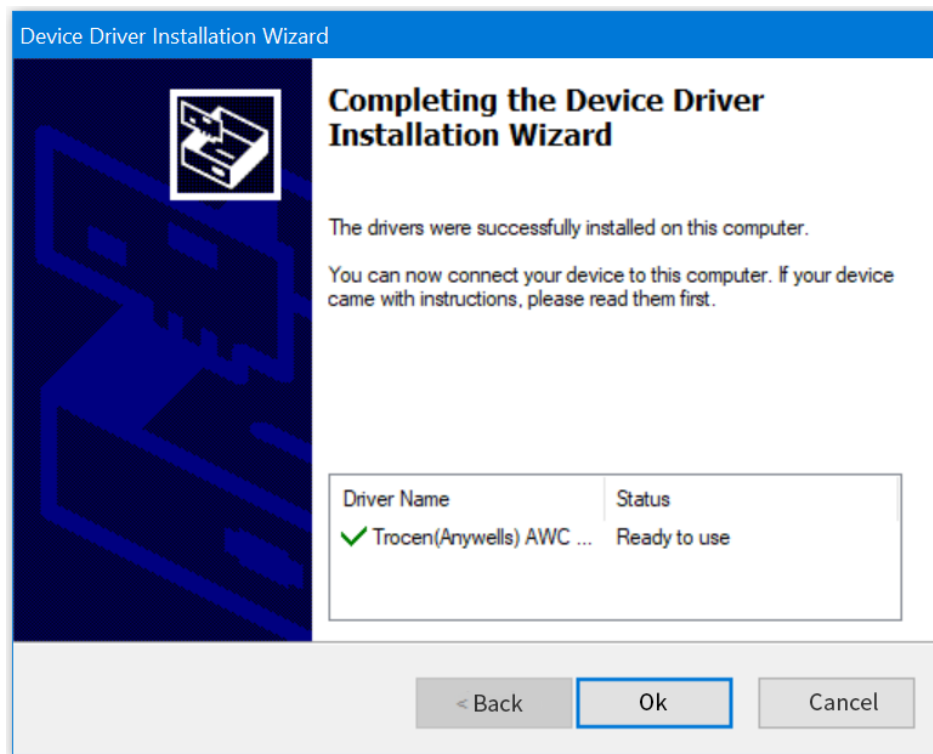


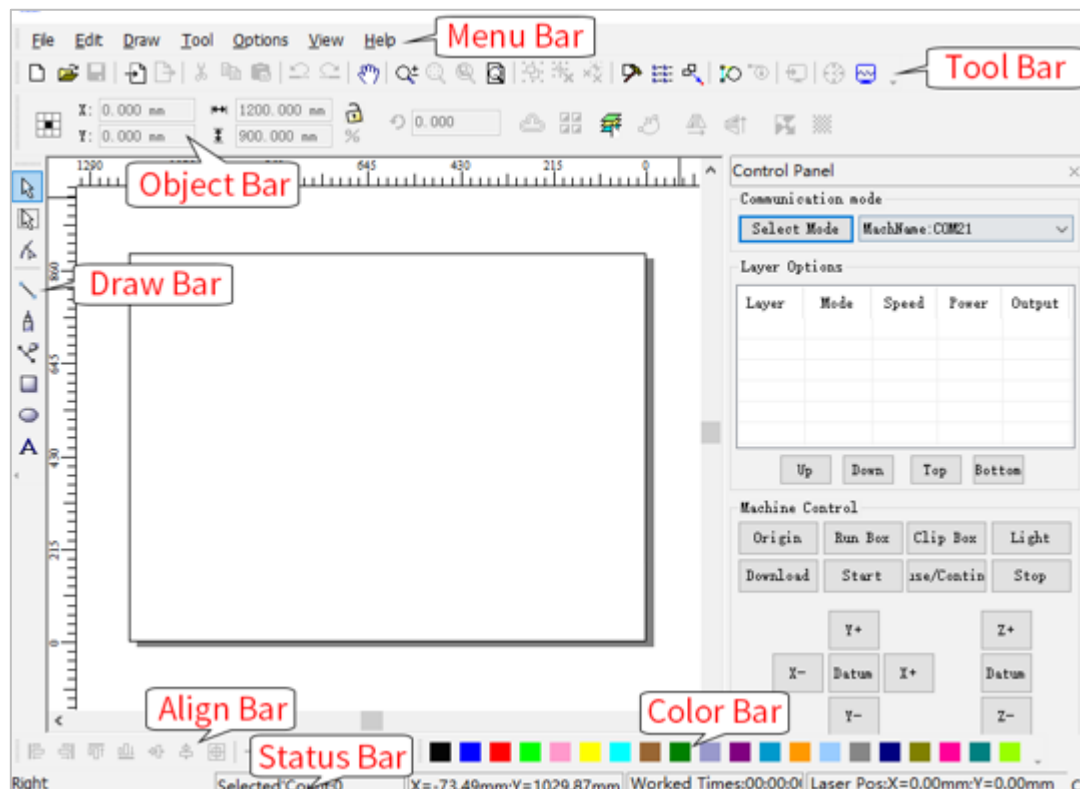
Figure2-10 Finish Installation



3. Basic Operation of TroCutCAD

3.1 Main Interface

Figure3-1-1 Main Interface



- **Menu bar**

The main functions of this software are executed by the command options in the menu bar. The menu bar contains seven sub-menus with different functions: File, Edit, Draw, Tool, Options, View and help.

- **Tool bar**

The tool bar contains some of the commonly used functions, most of which are selected from menus, in the form of command buttons.

- Object bar

The object bar provides relevant properties when selecting graphics and using tools. By setting the corresponding properties in the property bar, the graphics will change.

- Draw bar

It's on the left of working area. With these draw tools, they make operation more flexible and convenient.

- Align bar

Make multi objects align to perfect the layout of page.

- Color bar

Alter the color of selected layer and create multiple layers.

- Control panel

Use control panel to process tasks of machining, including setting communication, layer parameter, loading graphics and so on.

3.2 File

3.2.1 New


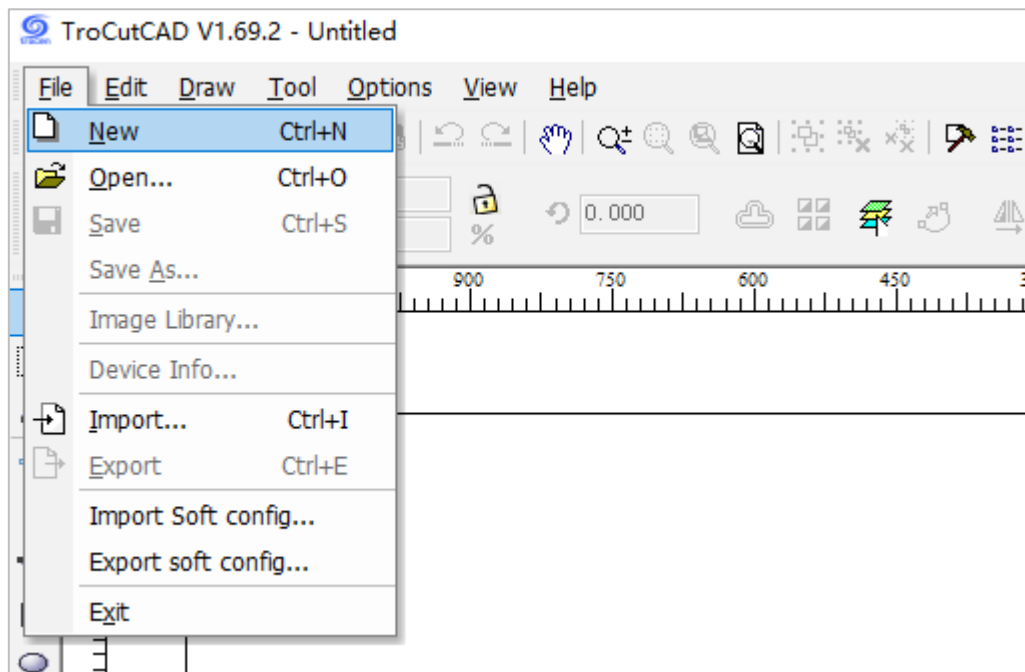
Press **【File】** and click **【New】** or click “” on the tool bar to create a new file.

Figure3-2-1 New



3.2.2 Open

Press **【File】** and click **【Open】** or click “” on the tool bar to open a file.

The suffix of file must be “pwj5” and users can preview the graphics on the open page.

The offline files with the suffix “ud6” cannot be opened directly by this way, and they can be opened via **【Import】** .

Figure3-2-1 New

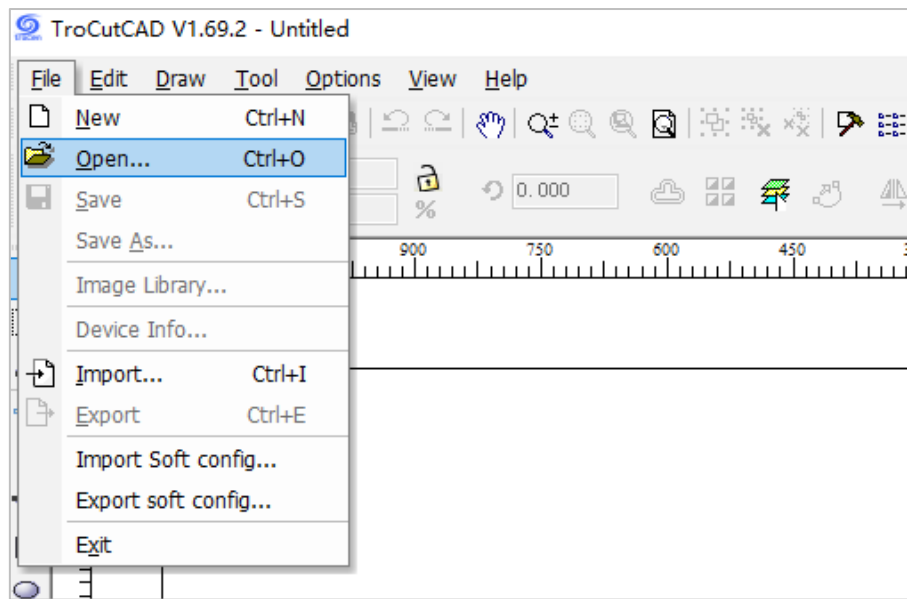
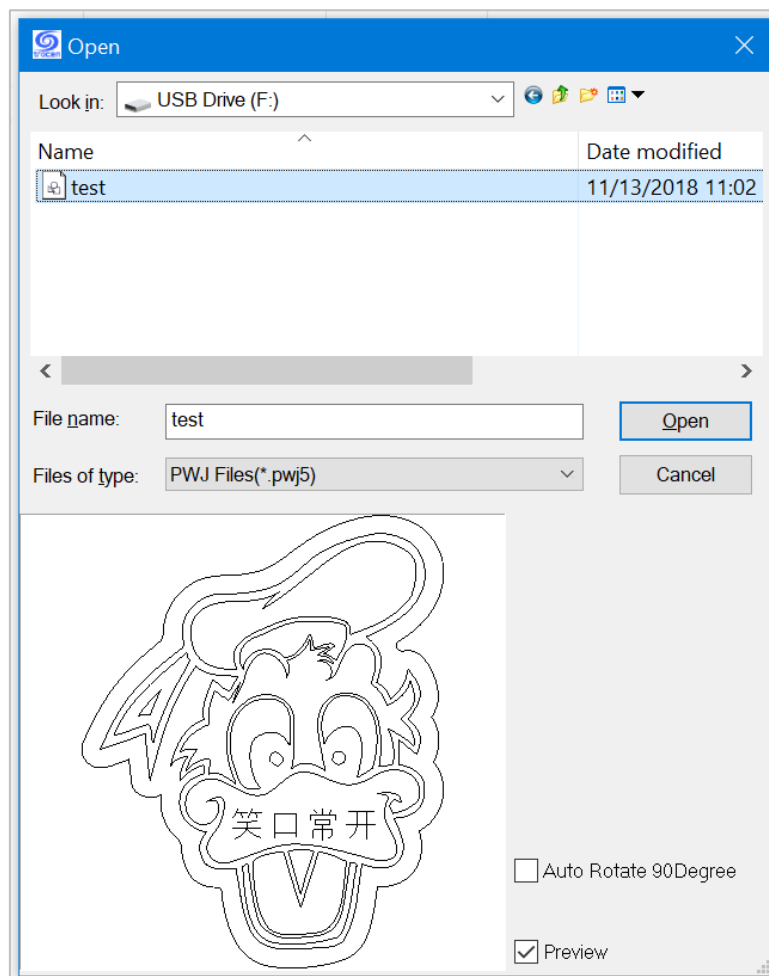


Figure3-2-3 Choose File

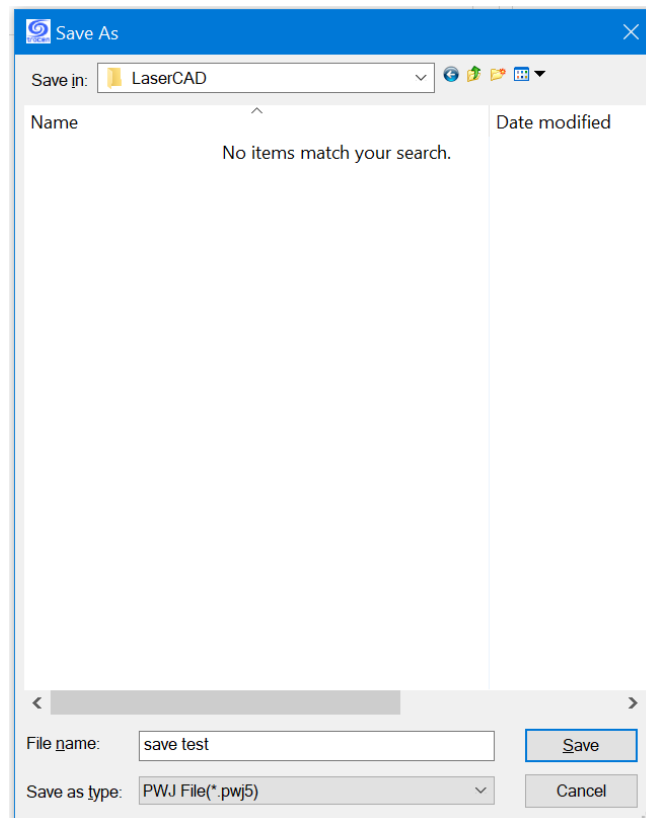


3.2.3 Save

Press **【File】** and click **【Save】** or click “” on the tool bar to save the file.

The suffix of file is “pwj5”.

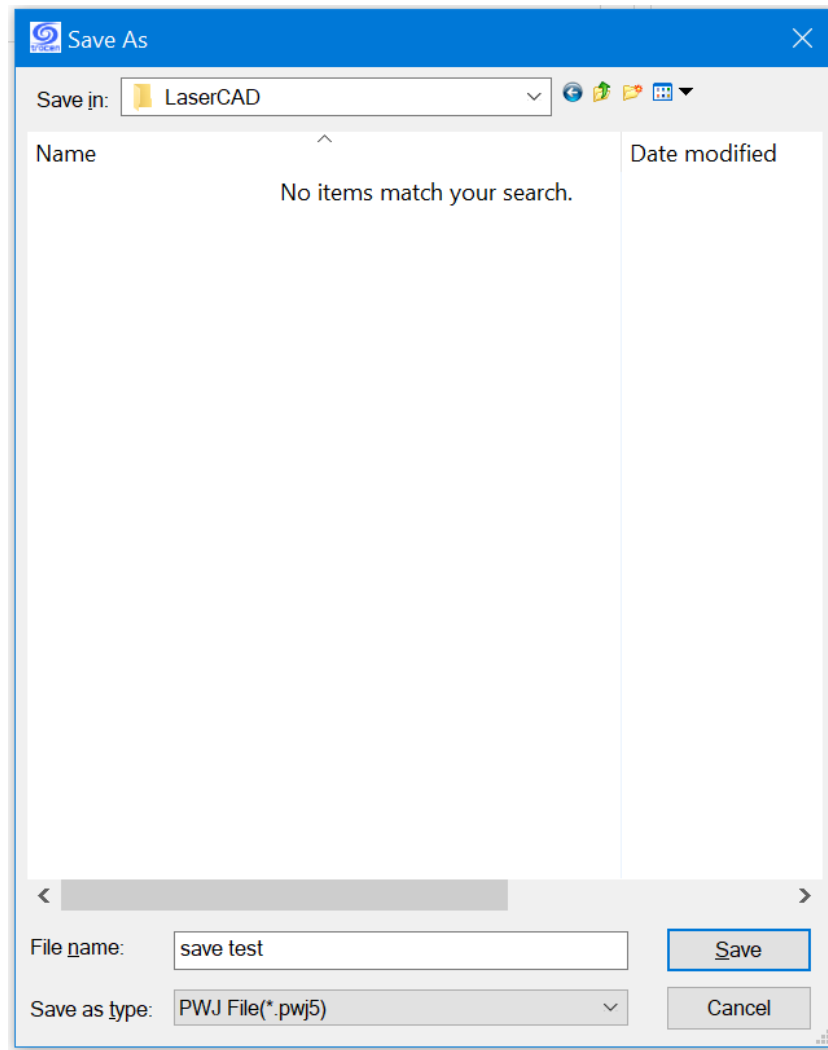
Figure3-2-5 Save



3.2.4 Save as

Press **【File】** and click **【Save as】** to save the file. The suffix of file is “pwj5”.

Figure3-2-6 Save as



3.2.5 Import


Press **【File】** and click **【Import】** or click “” on the tool bar to import a file. Trocen TroCutCAD software supports AI, DXF, PLT, SVG, PDF, G-CODE, DST, DSB and some other formats.

Figure3-2-7 Import

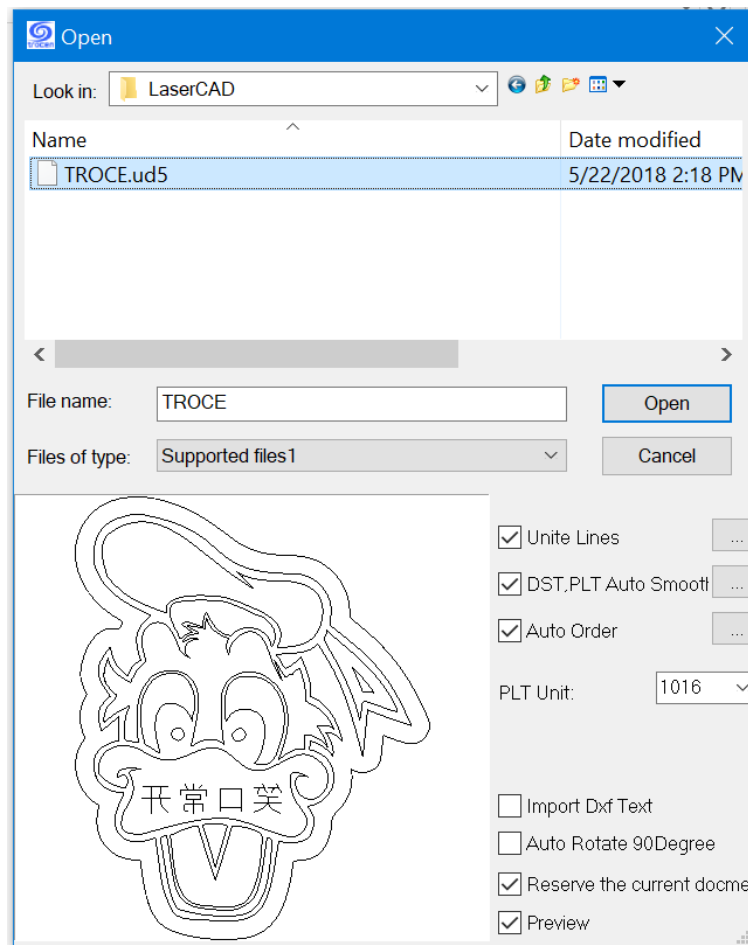



Table3-2-1 Instruction

Function	Instruction
Unite Lines	While importing graphics, combine the connected lines into one line.
Auto Smooth	Smooth processing of curves while importing files can improve the speed and smoothness of cutting.
Auto Order	When the graphics is imported, multiple objects in the graphics will be automatically ordered, making the cutting head move the shortest distance during process.

Reserve the Current doc...	The software retains the graphics before the file is imported. After imported, the software work area will show the original graphics and the imported file.
Preview	Displays preview when the file is selected.

Press “” behind Unite Lines to set unite tolerance.

Press “” behind Auto Smooth to smooth the lines.

Press “” behind Auto Order to enter the route optimize interface, users can set these parameters according to need. Please refer to the [Chapter3.6.6 of this article for more detail about Route Optimize](#).

3.2.6 Export


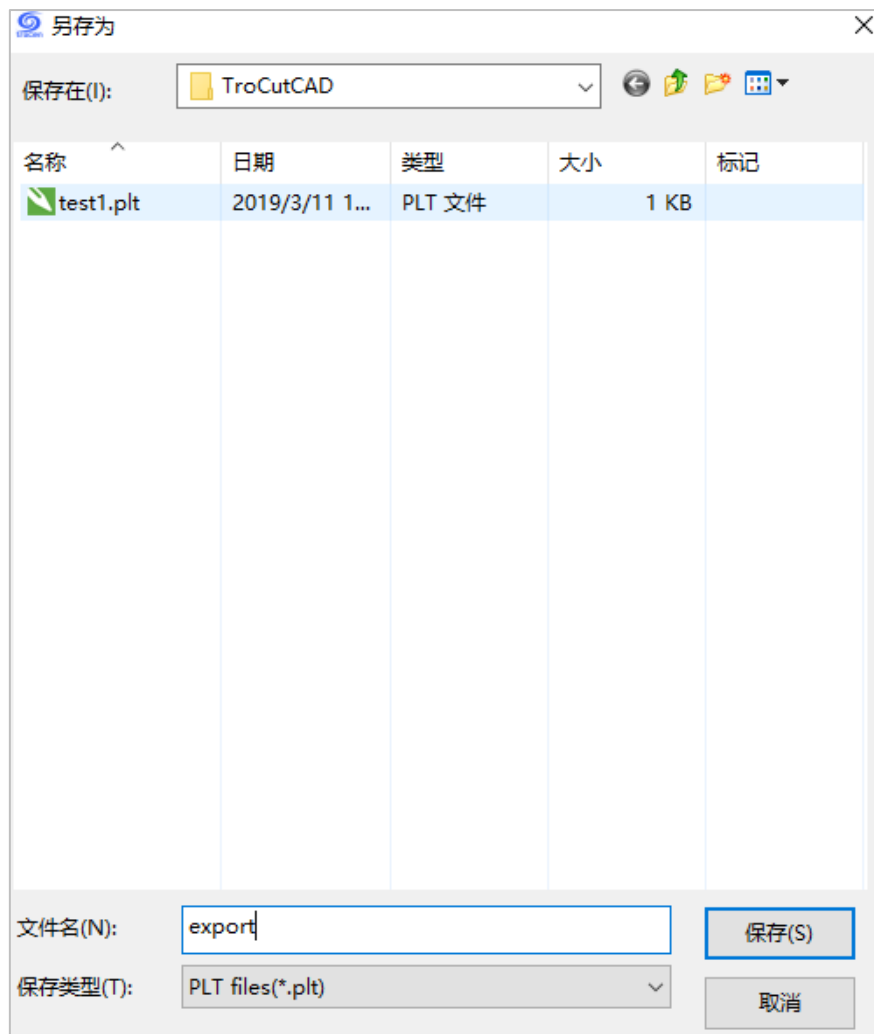
Press **【File】** and click **【Export】** or click “” on the tool bar to export the file.

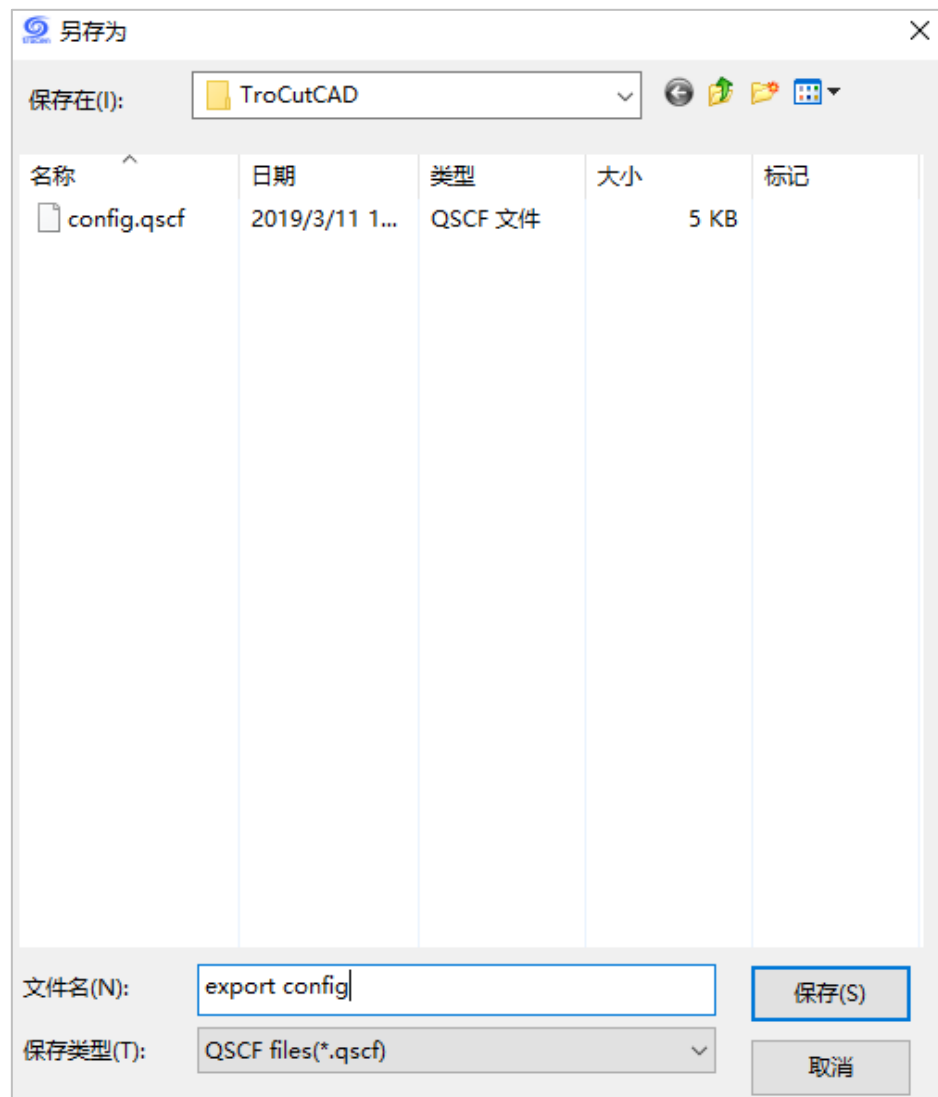
Figure3-2-8 Export



3.2.7 Import Soft Config

Press **【File】** and click **【Import soft config...】** to import the config file.

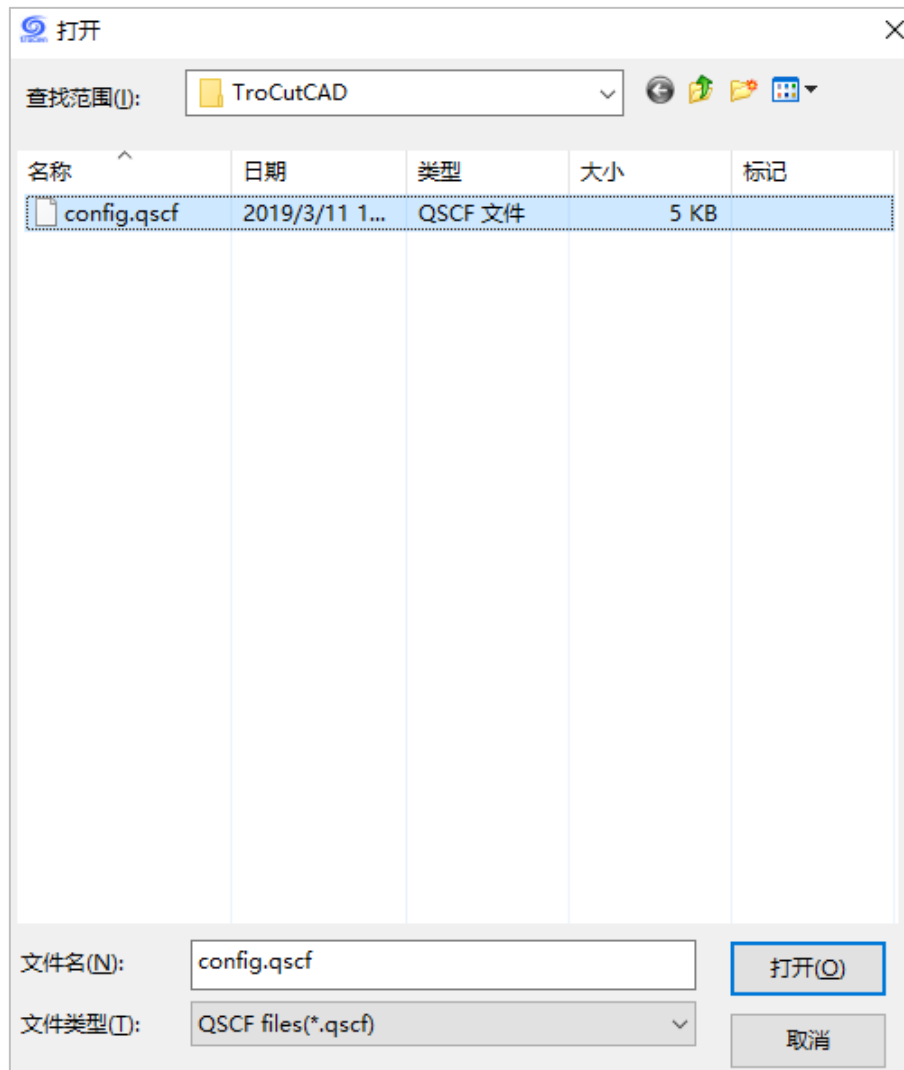
Figure3-2-11 Import Soft Config



3.2.8 Export Soft Config

Press **【File】** and click **【Export soft config...】** to export the config file..

Figure3-2-10 Export Machine Config



3.3 Select & Transform

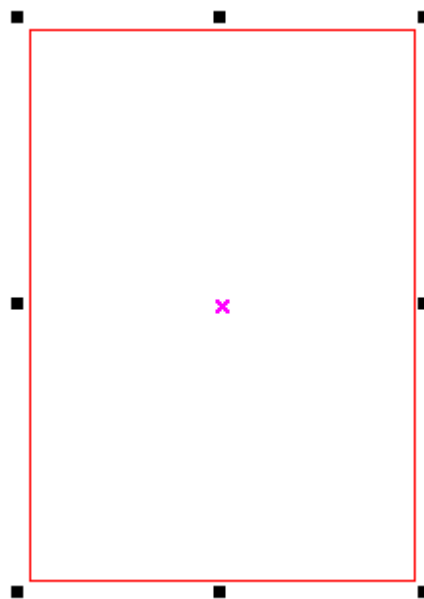
3.3.1 Select

While drawing or editing a graphics, you need to select the graphics first. When the graphics is selected, there is a "X" mark in the center. There are 8 control points around and the outline color is red by default.

Click **【Select】** under **【Draw】** or click "🖱️" on draw bar. There are five ways to select graphics.

- 1) Click **【All select】** under **【Edit】** to choose all the graphics on page.
- 2) Left-click the graphics.


Figure3-3-1 Choose One Graphics



3) Rect Select

"🖱️": Press the left-key of mouse and drag, as long as the selection box

touches the graphics will be selected.

“”: Press the left mouse button and drag. The selected graphics must be all selected by box.

4) Add/cut selected graphics

Add: Select the first graphics, then press “Shift” and click (or box) other graphics at the same time.

5) Select by color


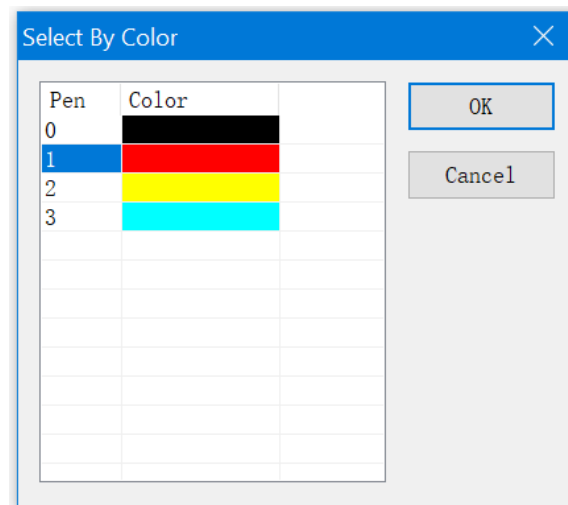
Click **【Select by color】** under **【Tool】** or click “” on tool bar, then choose one color, press **【OK】** and all the graphics in this layer will be selected.

Figure3-3-2 Select by Color



3.3.2 Change Color

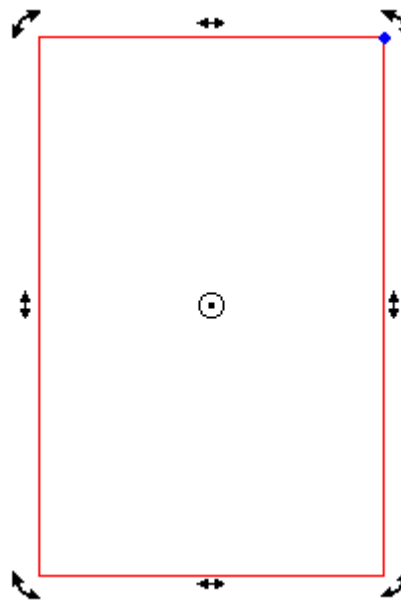
Select one graphics, then click any color you need on the color bar

“”, then the graphics will change color.

3.3.3 Rotate

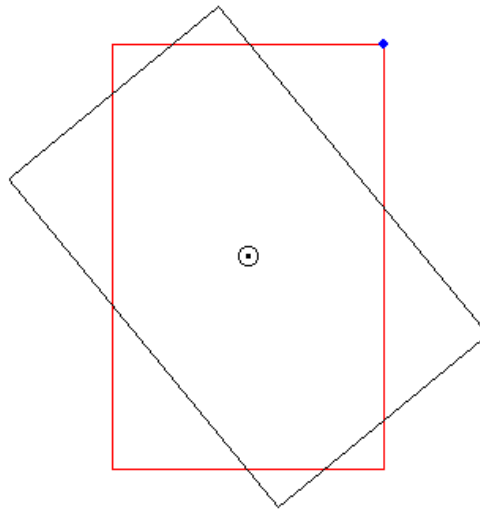
- 1) Input the rotate degree in "0.000", then press "↻" to make the graphics rotate.
- 2) Click "☞" and select the graphics, then click the graphics again, there will be 8 control points like "↻" and "↔". "↻" is for rotation and "↔" is for beveling.

Figure3-3-3 Rotate/Bevell



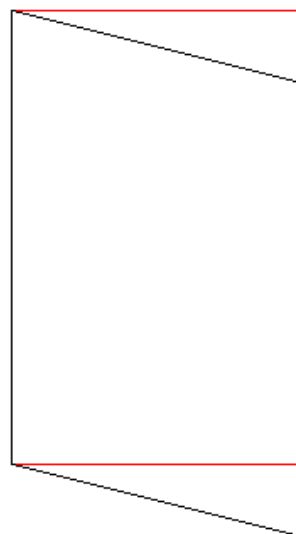
Move the mouse over the rotation control point and drag. As you drag, the outline of graphics rotates. When rotates to the desired position, release the mouse to complete rotation.

Figure3-3-4 Rotate



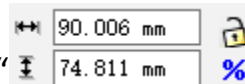
Move the mouse over the beveling control point and drag. As you drag, the outline of graphics moves. When moves to the desired position, release the mouse to complete beveling.





Figure3-3-5 Bevell



3.3.4 Size

- 1) Select a graphic and drag the control points to change the size of graphics.



- 2) Input accurate value in “ 74.811 mm ” textbox, then press **【Enter】** on keyboard to change the size of graphics. If the “” changes to “”, when you change one value, the other value will change in proportion to the origin ratio at the same time.


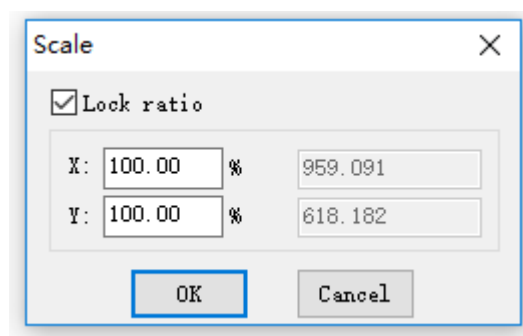
Click “”, users can change the size of graphics by percentage.


Figure3-3-6 Change by Percentage




If you check “Lock ratio” and change the X (Y) value, then the Y (X) value will change in the same percentage. If the “Lock ratio” is not checked, the X and Y percentages will not affect each other. Users can set different values according to need.

3.4 Edit

3.4.1 Undo

Press **【Edit】 / 【Undo】** or click “” to undo the previous action.


3.4.2 Redo

Press **【Edit】 / 【Redo】** or click “” to redo the previous action.


3.4.3 Cut

Select one or multi graphics, press **【Edit】 / 【Cut】** or click “” to cut these graphics.

3.4.4 Copy

Select one or multi graphics, press **【Edit】 / 【Copy】** or click “” to copy these graphics.

3.4.5 Paste

After cutting or copying graphics, press **【Edit】 / 【Paste】** or click “” to paste these graphics.

3.4.6 Delete

Select one or multi graphics, press **【Edit】 / 【Delete】** to delete these graphics.

3.4.7 Delete Worked Objects

Select one or multi graphics, press **【Edit】 / 【Delete Worked Objects】** to delete these graphics in the work region.


3.4.8 All Select

Press **【Edit】 / 【All Select】** to select all the graphics in the view.


3.4.9 Select Small Object

Press **【Edit】 / 【Select Small Object】** to select the small objects in the view.


3.4.10 Group

Select one or multi graphics, press **【Edit】 / 【Group】** or click “” to combine the independent graphics into a group.




3.4.11 Ungroup

Select one graphics group, press **【Edit】 / 【Ungroup】** or click “” to split the group into several independent graphics and groups.



3.4.12 All Ungroup

Select one graphics group, press **【Edit】 / 【All Ungroup】** or click “” to split the group into several independent graphics.



3.4.13 Add Node

Press **【Draw】** / **【Edit Node】** or click "", click where you want to add node, there will be a mark "". Press **【Edit】** / **【Add Node】** or click " " to add a node.



3.4.14 Delete Node

Press **【Draw】** / **【Edit Node】** or click "", select the node which you want to delete, press **【Edit】** / **【Delete Node】** or click " " to delete the node.

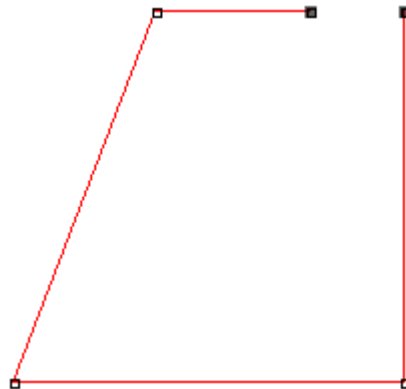
3.4.15 Separate Node

Press **【Draw】** / **【Edit Node】** or click "", select the node which you want to separate, press **【Edit】** / **【Separate Node】** or click " " to separate the node.

3.4.16 Unite Node

Press **【Draw】** / **【Edit Node】** or click "", select one node which you want to unite, then press **【Shift】** and select the other node at the same time. Click **【Edit】** / **【Unite Node】** or click " " to unite the two nodes. Trocen TroCutCAD only can unite 2 nodes at most one time.


Figur3-4-1 Unite Node





3. 4. 17 Move


Press **【Edit】 / 【Move】** or click “”, move the mouse to drag the view.

3. 4. 18 Zoom







Press **【Edit】 / 【Zoom】** or click “”. Click the left button of mouse (or scroll the mouse wheel forward) to enlarge view, and click the right button of mouse (or scroll the mouse wheel backwards) to reduce view.

Select the graphics, press **【Edit】 / 【Zoom】 / 【Zoom to selected】** or click “” to display the selected graphics by interface.

Select the graphics, press **【Edit】 / 【Zoom】 / 【Zoom to all objects】** or click “” to display all the selected graphics by interface.

Select the graphics, press **【Edit】 / 【Zoom】 / 【Zoom to page】** or click “” to display work area by interface.

3.4.19 Align

Select multi graphics, press **【Edit】/【Align】** or click “      ” to make graphics align as need.

3.4.20 Nudge Offset

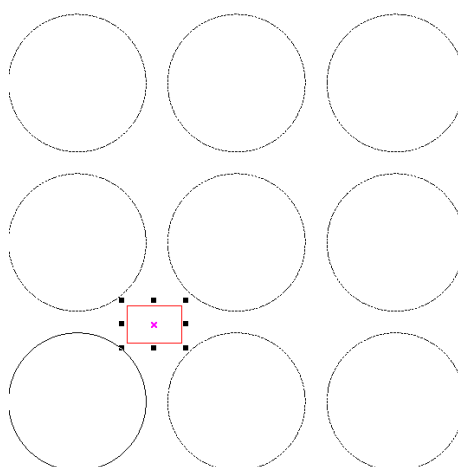
Select graphics, press **【Edit】 / 【Nudge offset】** and choose the relevant direction to make graphics move tinily.

3.4.21 Convert to Leftover

When this function is used in array, it means adding other graphics in blank space to save material. It is usually used in double cutting head array processing.

As shown in figure 3-4-2, draw a rectangle in the array. Click **【Edit】 / 【Convert to leftover】** to cut the rectangle in the blank area of the material to save the material.

Figure3-4-2 Convert to Leftover



3.4.22 Convert LastRow to Leftover

When this function is used in array, it means adding other graphics in the last column. Click **【Edit】 / 【Convert LastRow to Leftover】** and the last column of the array will be transformed into solid line. The graphics of solid line can be deleted and the new graphics can be added to the position for cutting through the import function.

Figure3-4-3 Convert LastRow to Leftover

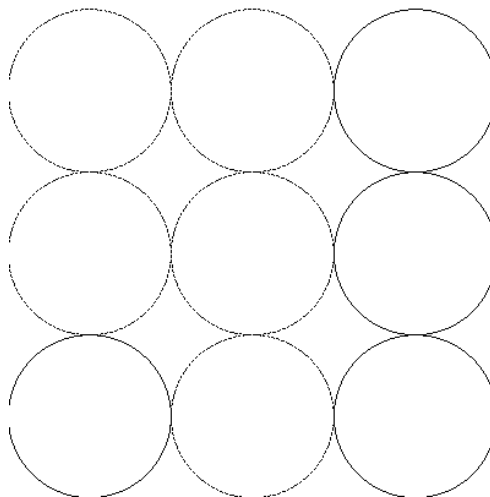
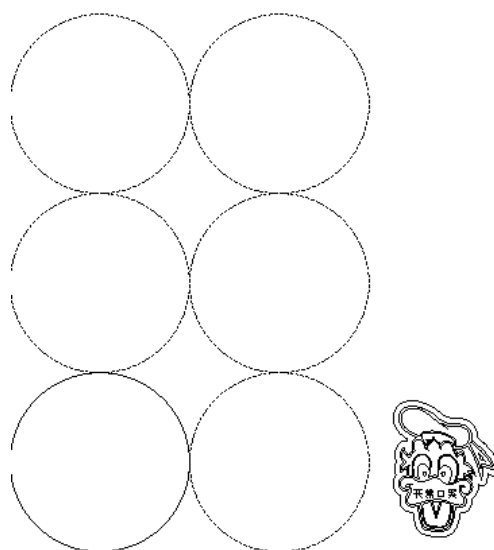


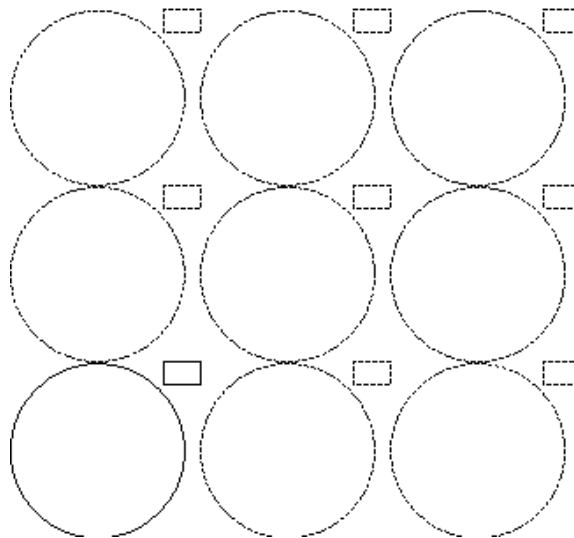
Figure3-4-4 Import New Graphics



3.4.23 Cancel Leftover

After adding leftover to array, click **【Edit】 / 【Cancel Leftover】** to remove leftover. The leftover graphics will convert to a part of array, as shown in figure 3-4-5.

Figure3-4-5 Cancel Leftover



3.4.24 ClothingMark

Click **【Edit】 / 【ClothingMark】** and choose the mark according to need. Click on the graphics, the mark will be added.

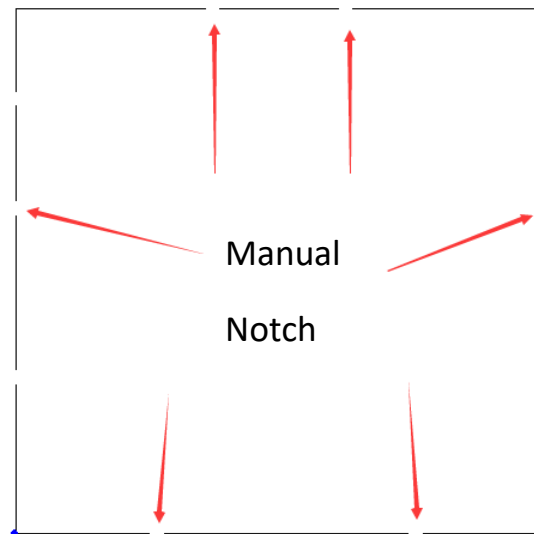
3.4.25 Manual Notch

During cutting, part of workpiece will be left on the edge to prevent it from falling off. This part is called bridge position.

Select graphics, click **【Edit】 / 【Manual Notch】** and input width parameter. Move cursor to the edge of graphics, when the cursor changes to “+”, click


left button of mouse to add notch manually.

Figure3-4-6 Manual Notch





3.5 Draw

3.5.1 Select

Click **【Draw】** / **【Select】** or click “” to change from edit state to select mode, click the graphics directly to select it.

3.5.2 Rect Select

Click **【Draw】** / **【Rect Select】** or click “”/ “” to change from edit state to rect select mode. Press and drag the left button of the mouse, a dotted box appears on the interface. Release the mouse, all the graphics in the dotted box will be selected.



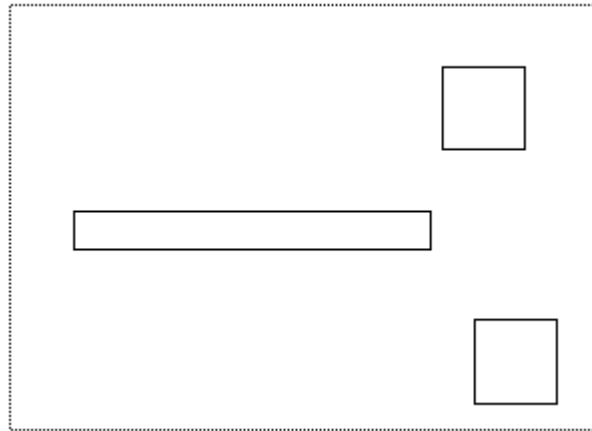





- 1) “” : Part of graphics is covered and the graphics will be selected.
- 2) “” : The whole graphics is covered and the graphics will be selected.

Figure3-5-1 Rect Select



3.5.2 Edit Node

Press **【Draw】** / **【Edit Node】** or click “”, there will be “” / “” / “” / “” on the object bar.

1. Select graphics.



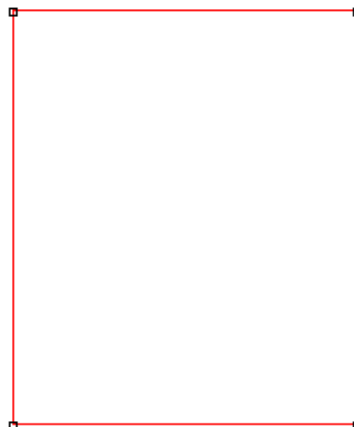
Select a graphics, click **【Draw】** / **【Edit Node】** or click “”. The node of graphics will show as “”.

Figure3-5-2 Select Graphics



2. Add node.

click where you want to add a node, there will be a mark “✱”. Click

【Edit】 / 【Add Node】 or click “✱” to add a node.

Figure3-5-3 Mark

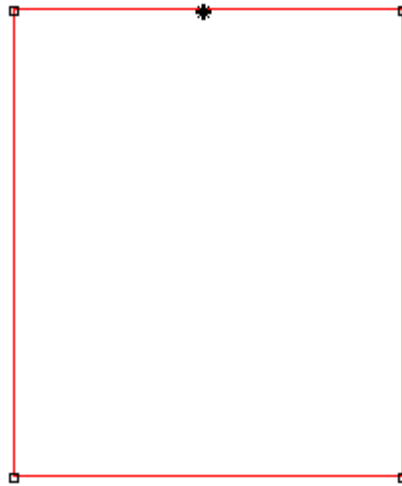
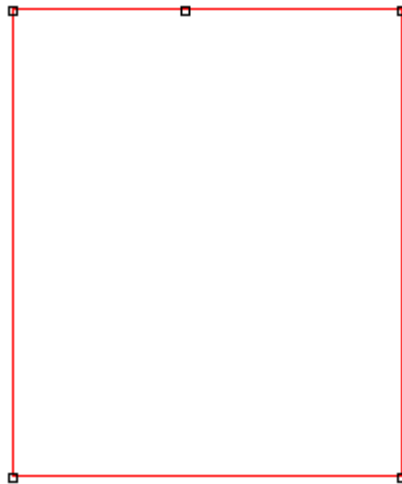


Figure3-5-4 Add Node



3. Delete node.

Click 【Draw】 / 【Edit Node】 or click “✱”, select the node which you want to delete, click 【Edit】 / 【Delete Node】 or click “✱” to delete

the node.

Figure3-5-5 Select One Node

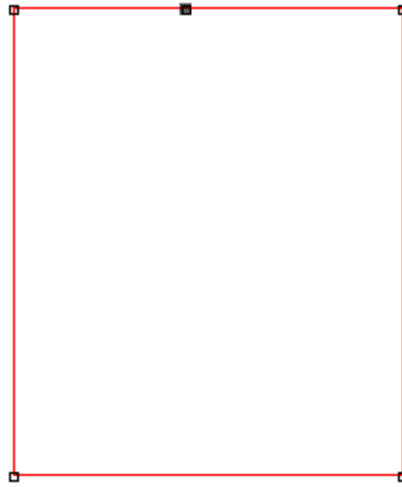
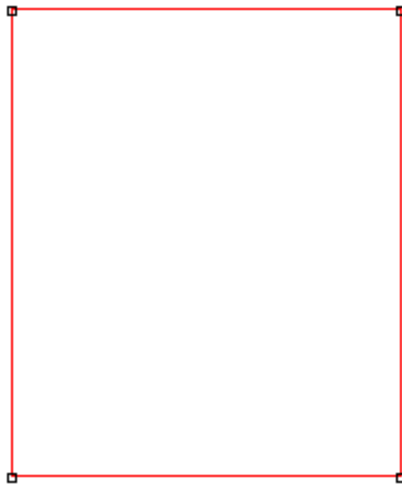




Figure3-5-6 Delete Node



4. Separate node.

Click **【Draw】** / **【Edit Node】** or click “”, then select the node which you want to separate, press **【Edit】** / **【Separate Node】** or click “” to separate the node.

Select the two nodes as Figure3-5-7, and separate these two nodes.

The graphics will separate into two parts as Figure3-5-8.

Figure3-5-7 Separate Two Nodes

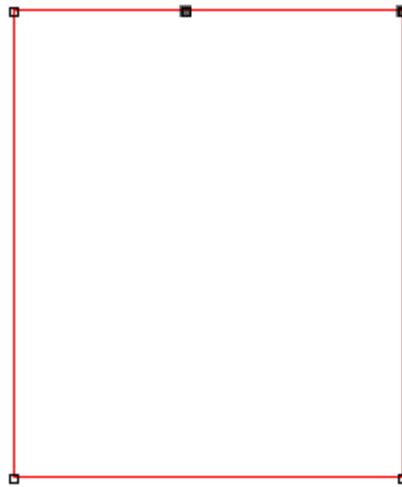
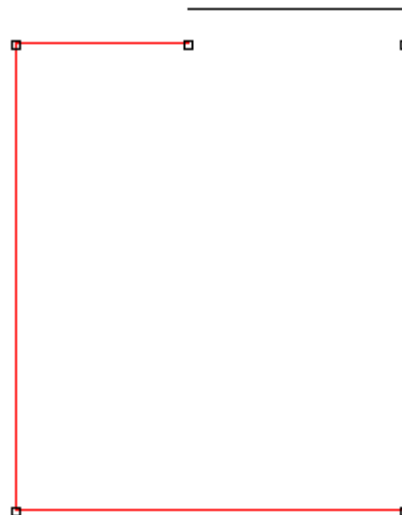




Figure3-5-8 Separate Graphics



5. Unite node.

Click **【Draw】 / 【Edit Node】** or click “”, select one node which you want to unite, then press **【Shift】** and select the other node at the same time. Click **【Edit】 / 【Unite Node】** or click “” to unite the two nodes.

Trocen TroCutCAD only can unite 2 nodes at most one time.

Figure3-5-9 Select Two Nodes

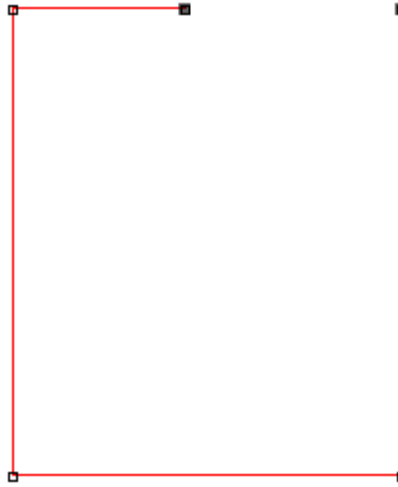



Figure3-5-10 Unite Nodes




3.5.4 Draw Line


Click **【Draw】** / **【Line】** or click “”. Click the left button of mouse on the screen and drag cursor to the desired position. Click the left button again to draw a line.

When drawing a line, press **【Ctrl】** while dragging cursor to draw a horizontal or vertical line.

3.5.5 Draw Polyline


Click **【Draw】** / **【Polyline】** or click "". Click the left button of mouse on the screen and drag the mouse to the desired position. Click the left button again to draw a line. Repeat these operations to draw polyline. Then click the right button of mouse to finish drawing.

3.5.6 Draw Rectangle

Click **【Draw】** / **【Rectangle】** or click "". Click the left button of mouse on the screen and drag cursor to draw a rectangle.


When drawing a rectangle, press **【Ctrl】** while dragging cursor to draw a square.

3.5.7 Draw Ellipse

Click **【Draw】** / **【Ellipse】** or click "". Click the left button of mouse on the screen and drag cursor to draw an ellipse.

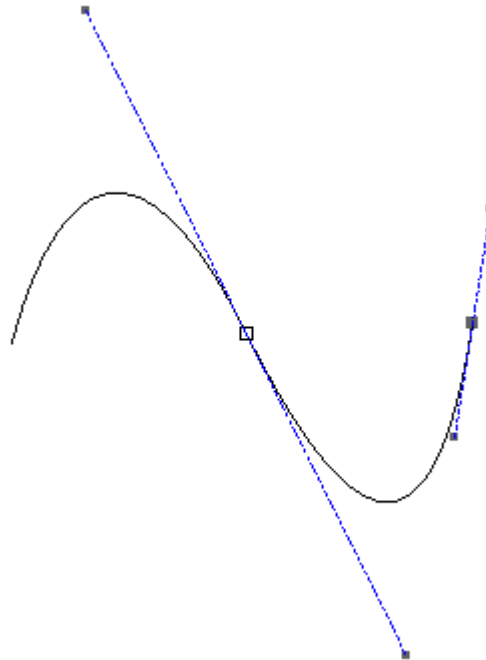
When drawing an ellipse, press **【Ctrl】** while dragging cursor to draw a perfect circle.

3.5.8 Draw Bezier

Click **【Draw】** / **【Bezier】** or click "". Click the left button of mouse on the screen to set the start point of Bezier curve and move cursor to the desired position, click the left button again and drag the left button to

adjust the curve.

Figure3-5-11 Bezier



3.5.9 Text

Click **【Draw】 / 【Text】** or click “**A**”. Click the left button of mouse two times on the screen to open the text input box. Select font and size of text, then click **【OK】** .

Figure3-5-12 Add Text

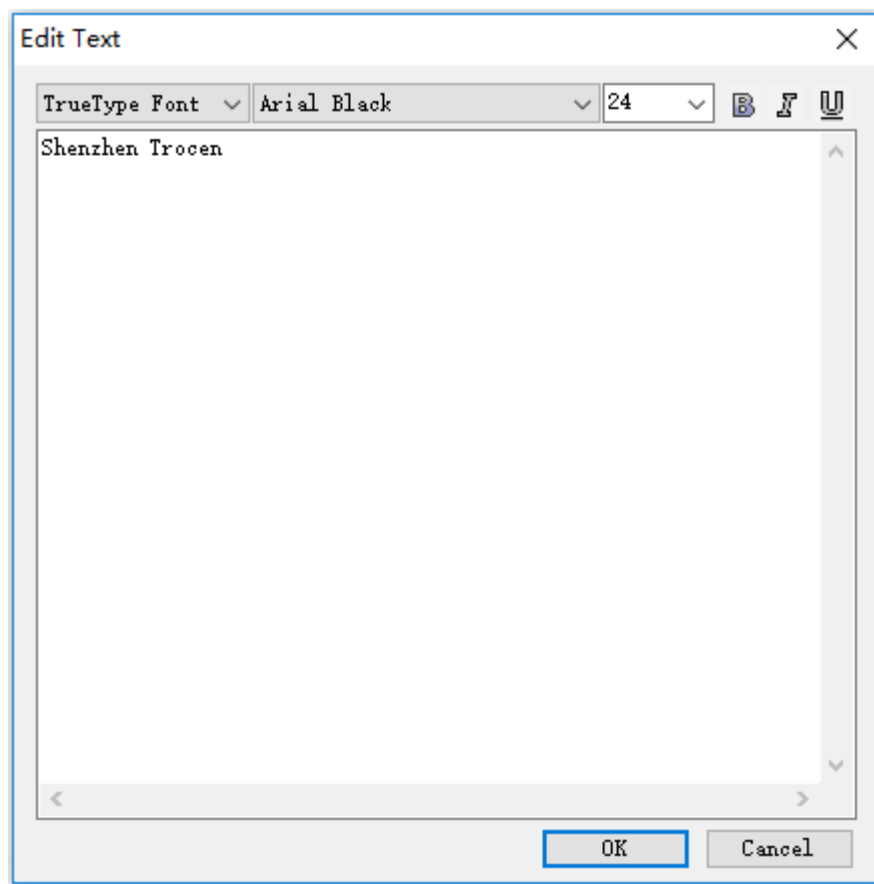
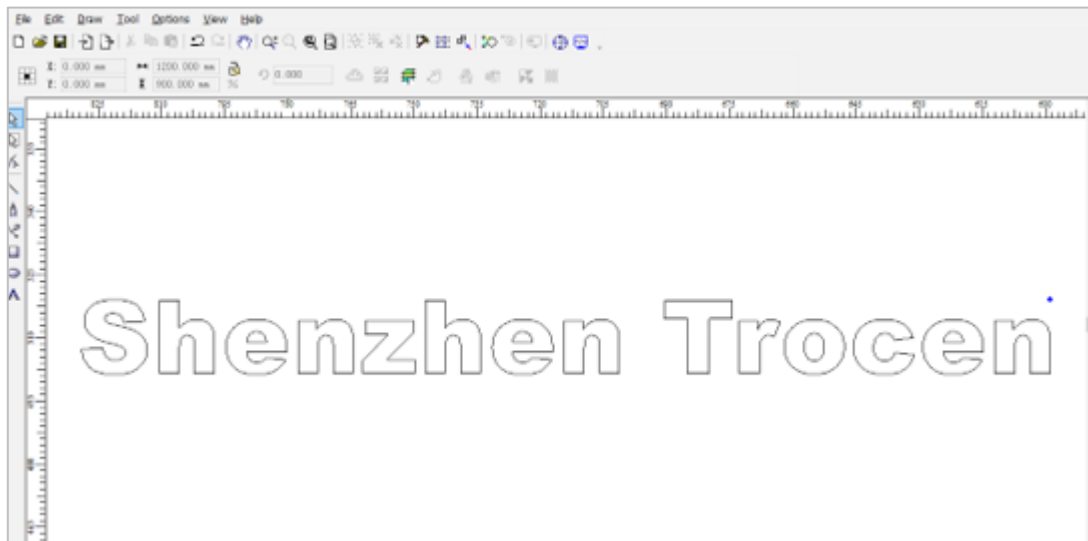


Figure3-5-13 Work Interface



3.6 Tool

3.6.1 Add Size Mark

Click **【Tool】 / 【Add Size Mark】** to set the mark parameters, click **【Pick】** to save.

Figure3-6-1 Size Mark Parameters1

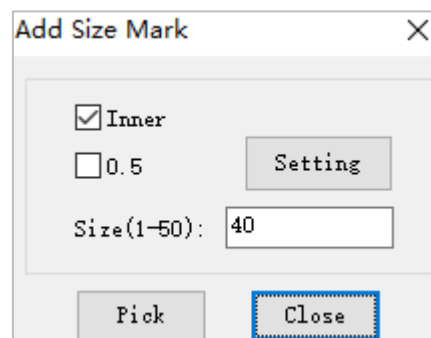
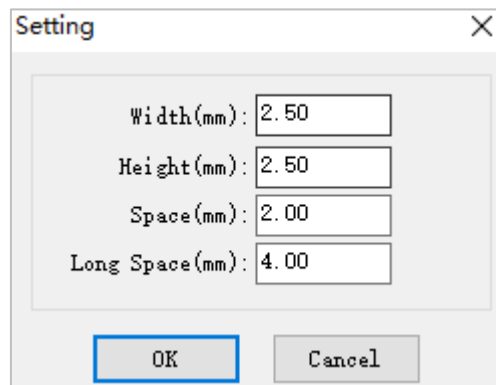


Figure3-6-2 Size Mark Parameters2



A dialog box titled "Setting" with a close button (X) in the top right corner. It contains four input fields for size mark parameters:

- Width(mm): 2.50
- Height(mm): 2.50
- Space(mm): 2.00
- Long Space(mm): 4.00

At the bottom, there are two buttons: "OK" and "Cancel".

3.6.2 Array Clone



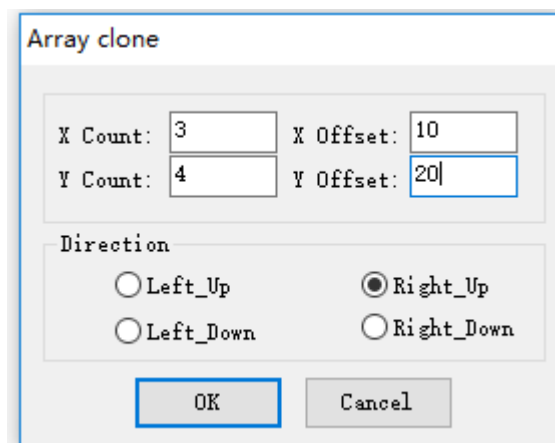
Click “” to select the graphics which you want to setup array. Click **【Tool】** / **【Array Clone...】** or click “”, set the array parameters, click **【OK】** .

Figure3-6-3 Array Parameters



A dialog box titled "Array clone" with a close button (X) in the top right corner. It contains input fields for array parameters:

- X Count: 3
- X Offset: 10
- Y Count: 4
- Y Offset: 20

Below these fields is a section labeled "Direction" with four radio button options:

- ☐ Left_Up
- ☒ Right_Up
- ☐ Left_Down
- ☐ Right_Down

At the bottom, there are two buttons: "OK" and "Cancel".

Figure3-6-4 Select Graphics

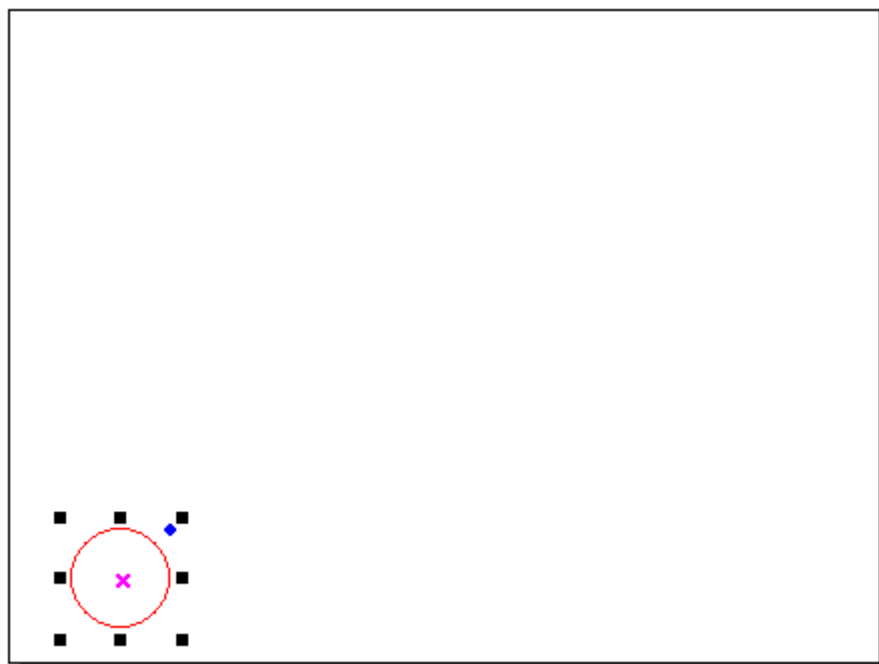
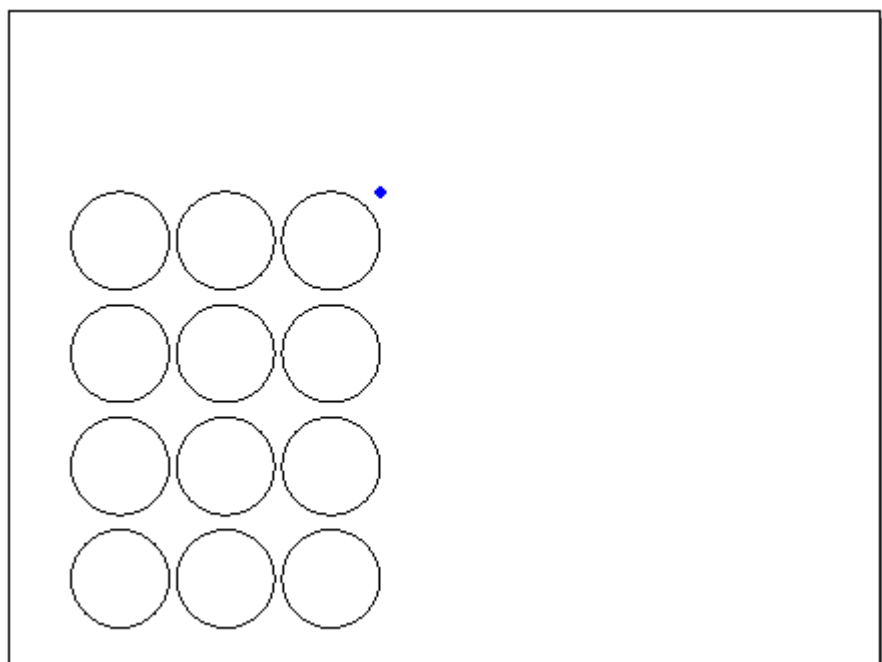


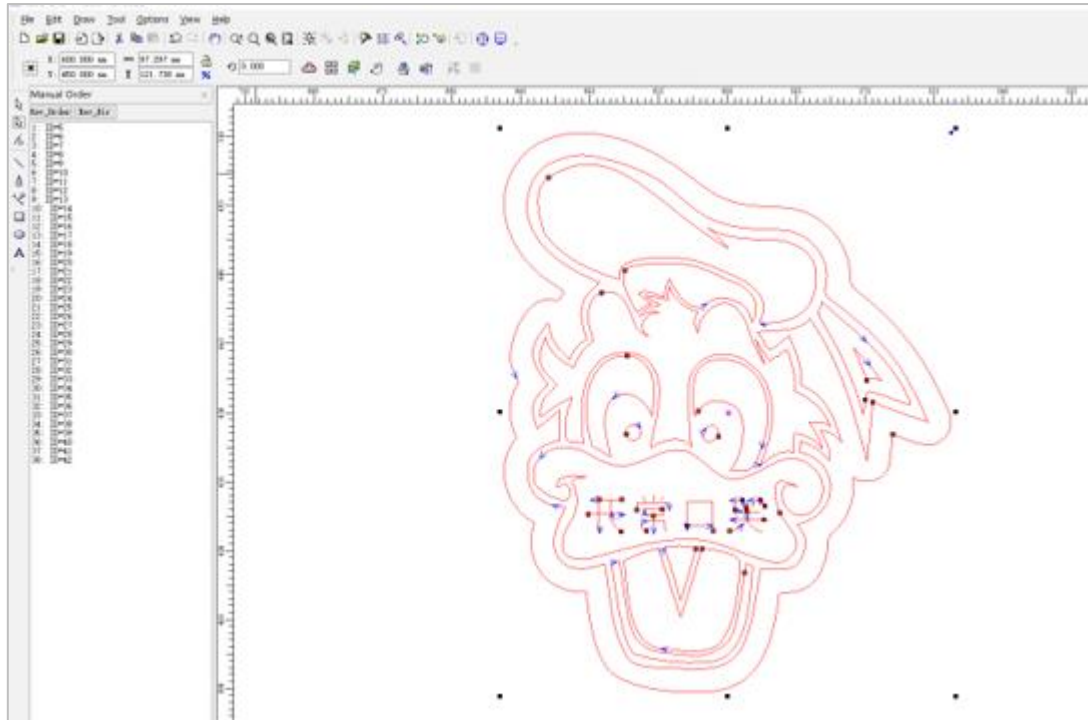
Figure3-6-5 Array



3.6.6 Manual Order


Click **【Tool】 / 【Manual Order】** to enter the manual order interface.

Figure3-6-5 Manual Order




1. Change serial number of objects. Items listed in the **【Manual Order】** window is related to the serial number of the corresponding objects. The closer to the top the item is, the more prior the corresponding object is to be processed.
 - 1) Drag items in the [Manual Order] with mouse, allow to change the item to top of cursor.
 - 2) Double click the item in the [Manual Order], will move it to the top
 - 3) Click **【Rev-Order】** will reverse all items.

2. Change cutting start point of object.

Cutting start point shown as “”, click the object and change the cutting start point.

3. Change cutting direction of object.

Cutting direction is shown as “”. Click **【Manual Order】**/**【Rev-Order】** to reverse the cutting direction.

4. Rev_Order.

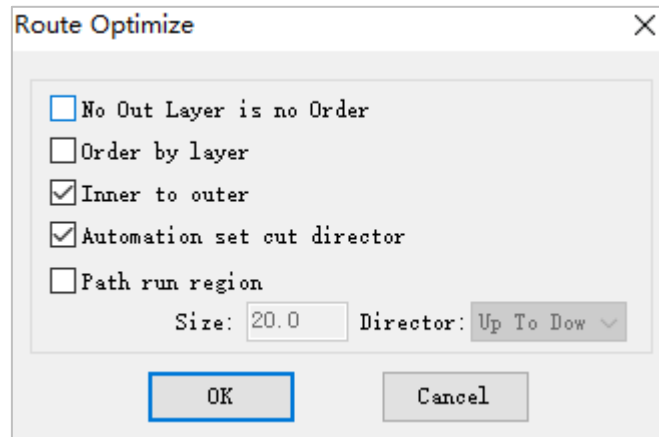
Click **【Manual Order】** / **【Rev-Order】** to reverse the cutting order.

3.6.7 Automatic Order

【Automatic Order】 is used to set the objects order automatically in the current file. After automatic order, the processing distance will be the shortest theoretically.

Click **【Tool】** / **【Automatic Order】** , select the functions as need and click **【OK】** .

Figure3-6-8 Automatic Order



- Order by layer

Graphics elements with the same color will be arrange in the same layer. When cutting, the machine will complete one color layer, then turn to another color.

- Inner to outer

Inner graphics will be processed preferentially to the outer graphics. When cutting, it will process the inner graphics, then turn to the outer graphics.

- Automation set cut director

Automatically set cutting start point and direction of the graphics when order the graphics.

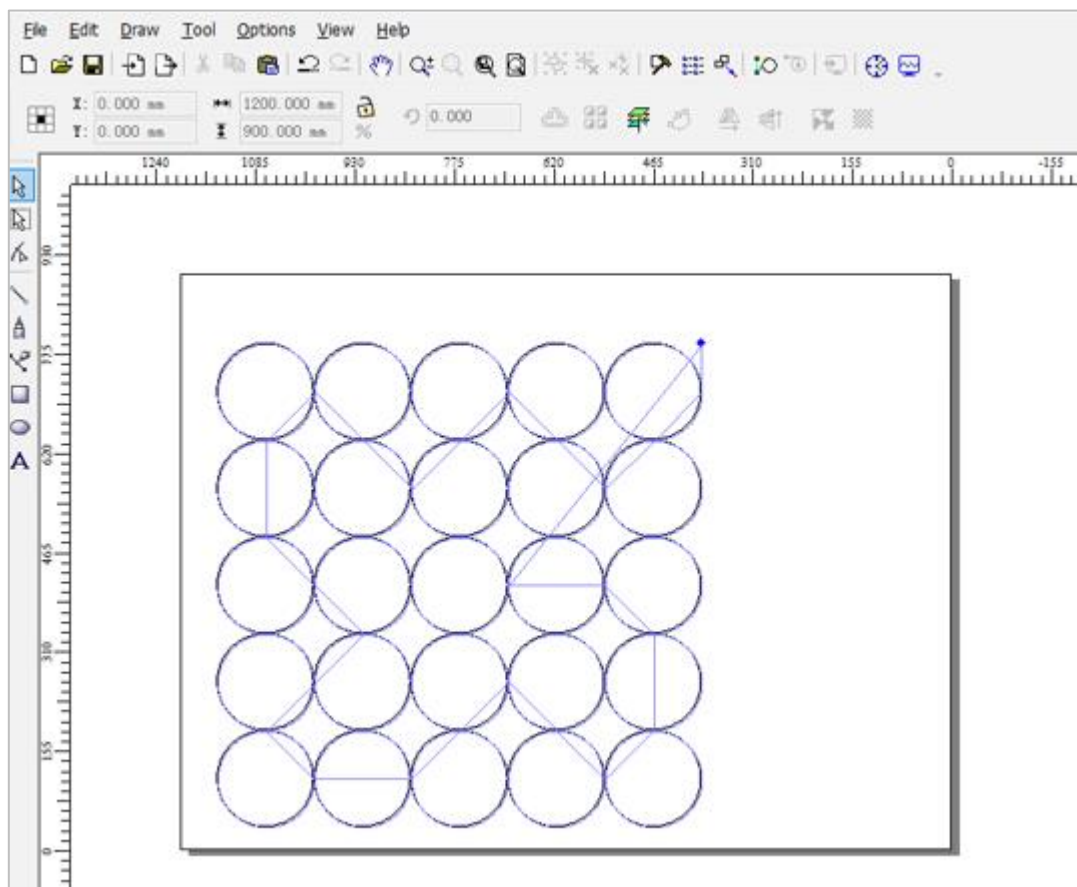
- Path run region

The machine will process graphics according to **【Size】** and **【Director】** parameters. **【Path run region】** is normally used to order regular array, (such as circle array or rectangle array), the **【Size】** is set to the height

of a single graphics in the array.

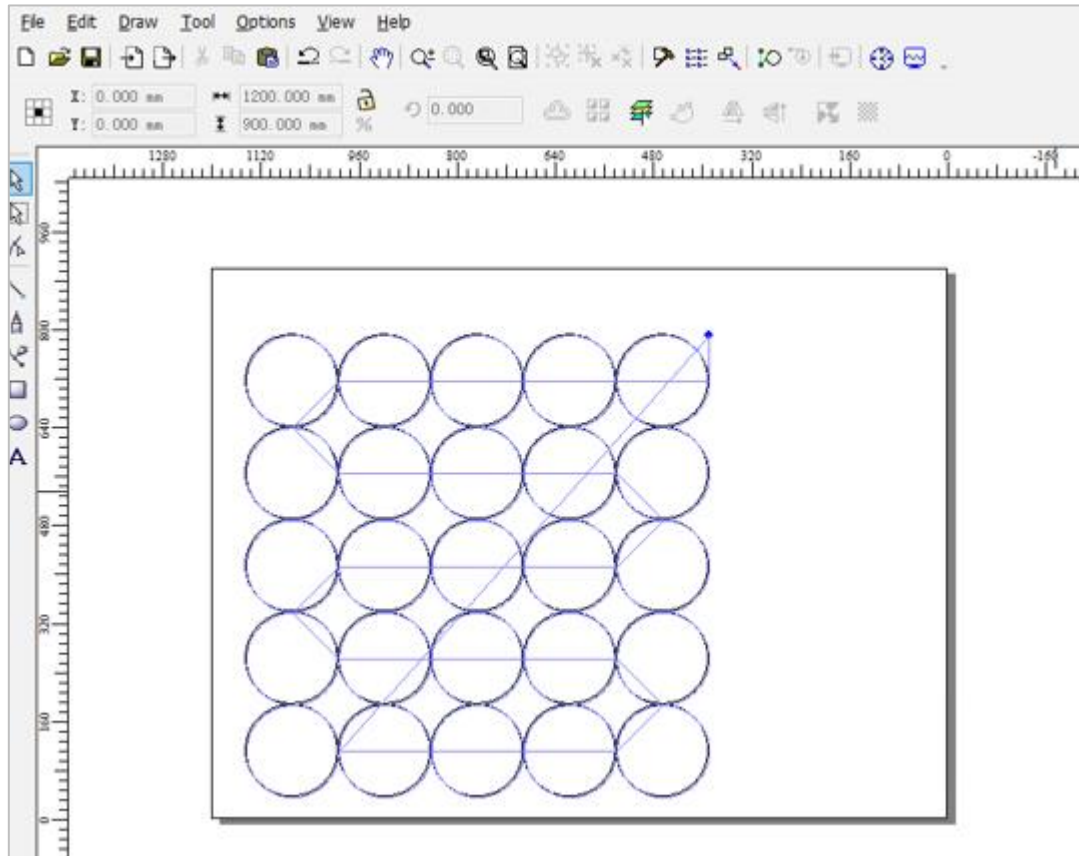
Set up a circle array with 5 rows and 5 columns. The diameter is 150mm. Check【Automation set cut director】and【Clockwise director】, do not check 【Path run region】, the cutting path is shown as Figure3-6-7.

Figure3-6-9 Cutting Path without 【Path run region】



Check **【Path run region】** and set the **【Size】** to “150”, **【Director】** to “Up to down”, the cutting path is shown as Figure3-6-10.

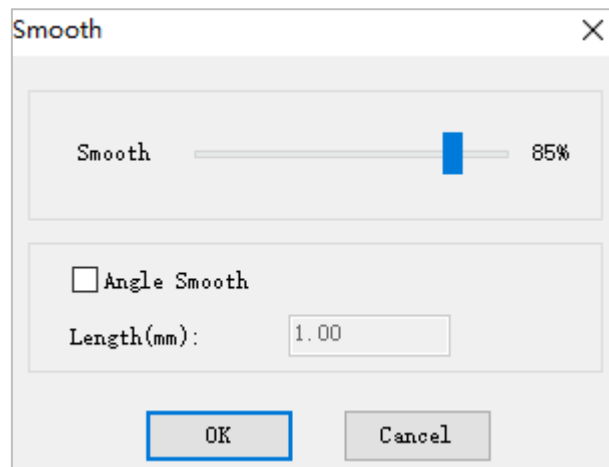
Figure3-6-10 Cutting Path with **【Path run region】**



3. 6. 8 Smooth Object (s)

Smooth the curve so as to increase cutting speed and stability. Click **【Tool】** / **【Smooth Objects】** , and set the suitable smooth value then click **【OK】** . The value of the smooth percentage is bigger and the curve is more smoothly. But if the percentage value is too large, the graphics will change.

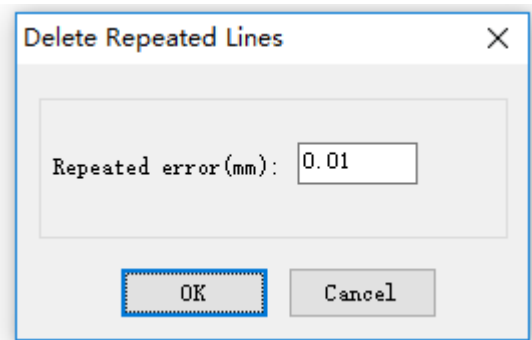
Figure3-6-11 Set Smooth Percentage



3.6.8 Delete Repeated Lines

【Delete Repeated Lines】allows delete repeated/overlapping lines, so the machine will not repeat cutting. Click 【Tool】 / 【Delete Repeated Lines】 , set suitable 【Repeat error】 , then click 【OK】 .

Figure3-6-12 Delete Repeated Lines



Set up a rectangle array with 3 rows and 4 columns as Figure3-6-13 (the X/Y Offset is "0"). Click 【Tool】 / 【Delete Repeated Lines】 (the Repeated error is "0.01"), then click 【OK】 , users can see the tooltip as Figure3-6-14.

After deleting repeated lines, the array will be divided into several

independent segments as Figure3-6-15.

Figure3-6-13 Set Up Array

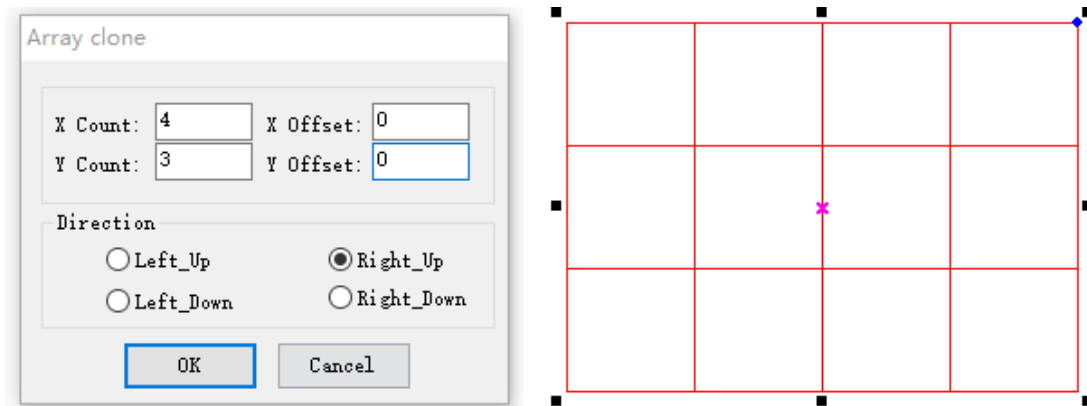


Figure3-6-14 Result of Delete Repeated Lines

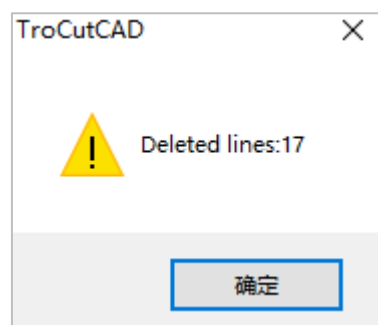
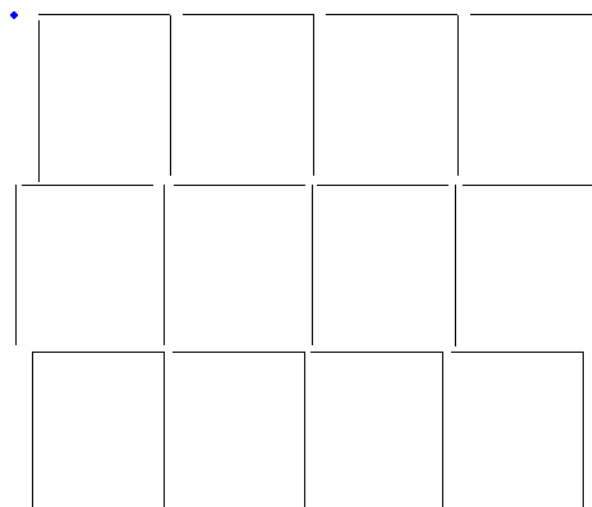


Figure3-6-15 Split Graphics



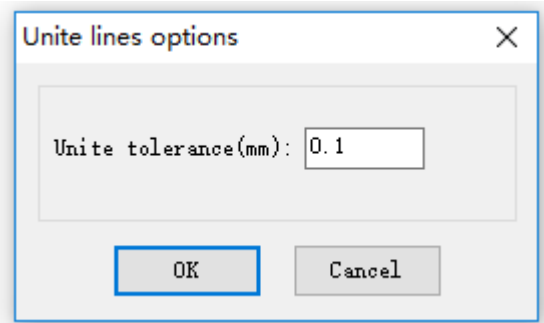
3.6.10 Unite Lines

【Unite Lines】 will unite linked multiple segment to single segment. Click 【Tool】/【Unite Lines】, set suitable 【Unite tolerance】, then click 【OK】.

- Unite tolerance

2 segments will be united to 1 segment if their distances are smaller than unite tolerance.

Figure3-6-16 Unite Tolerance



3.6.11 Auto Cutting Guide_Line

When drawing or importing a graphics, the curve does not have the guide line by default. Select the graphics that needs to add the guide line, click


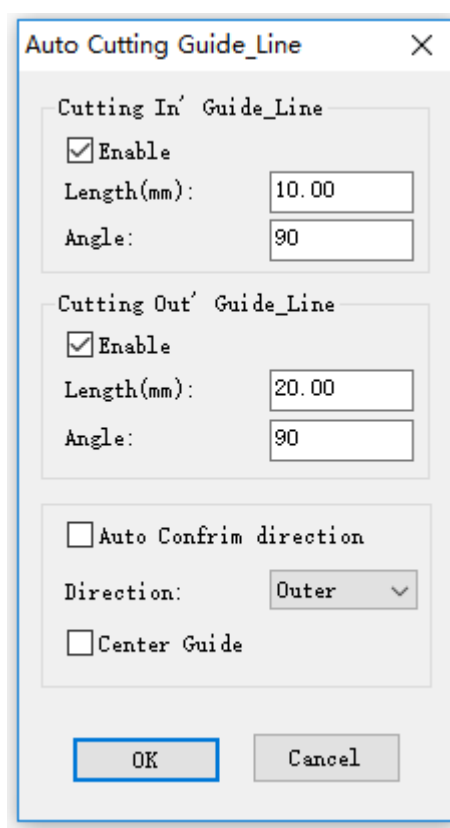
【Tool】 / 【Auto Cutting Guide_Line】 or click “” to open the 【Auto Cutting Guide_Line】 interface.

Figure3-6-14 Auto Cutting Guide_Line



- Angle

The angle between the cutting in'/out' guide_line and the start line.
Counterclockwise is positive.

- Direction

If you do not check【Auto Confirm direction】, you can set the direction

to “Outer” or “Inner” manually. Set **【Direction】** to “Inner”, the guide line will be drawn from the inside of the graphics. And the “Outer” is opposite.

- Center Guide

The guide line leads to the center of graphics.

Figure3-6-18 Outer

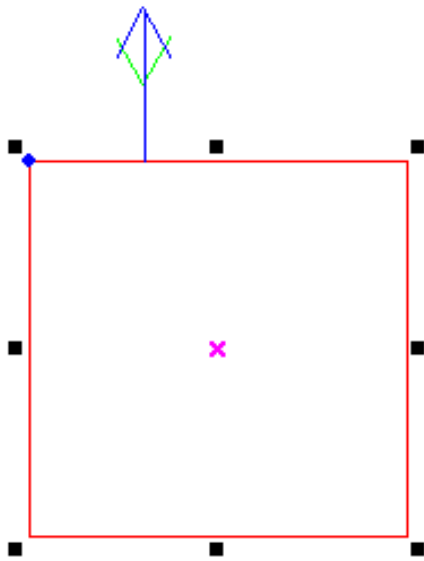


Figure3-6-19 Inner

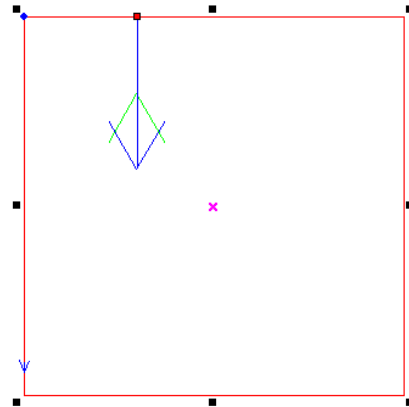


Figure3-6-20 Outer (Center Guide)

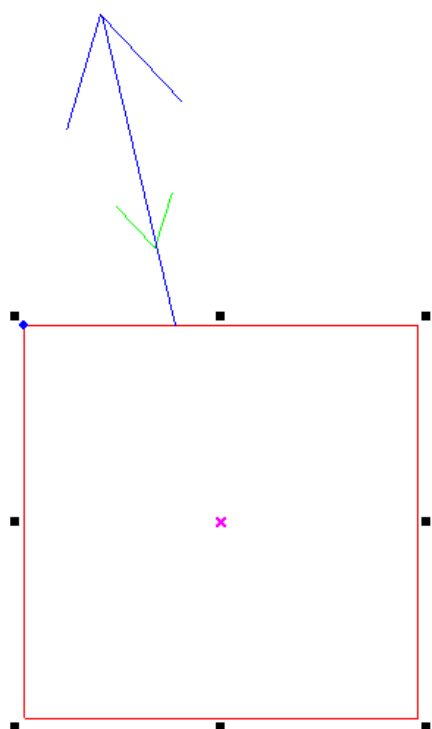
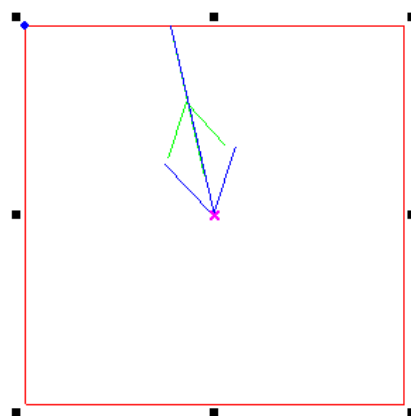


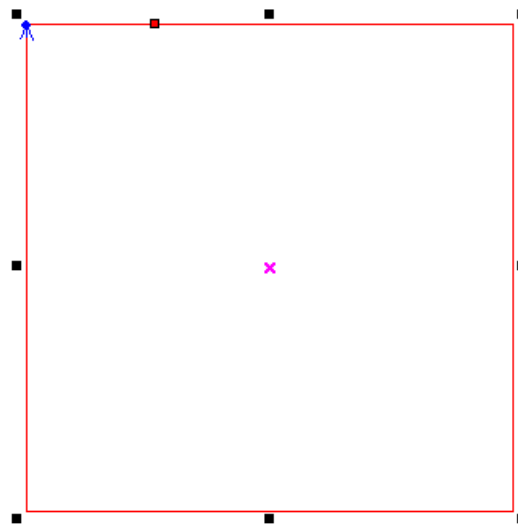
Figure3-6-21 Inner (Center Guide)



3.6.12 Edit Cutting Guide_Line

The cutting start point of graphics is marked with “■”, click **【Tool】 / 【Automatic order】**, then click the left button of mouse to change the cutting start point. The cutting direction is shown with “↖”.

Figure3-6-22 Cutting Start Point




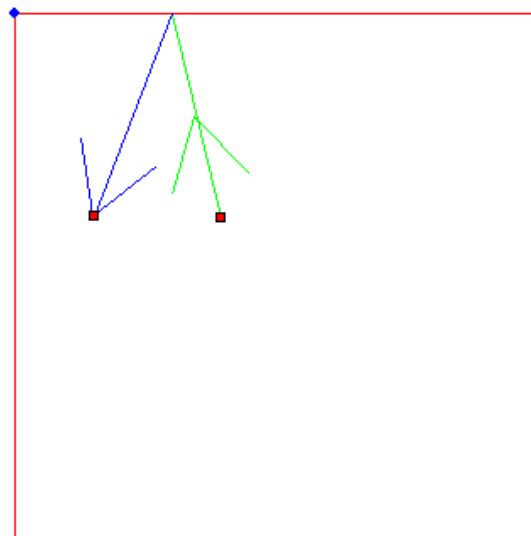
Click **【Tool】 / 【Edit Cutting Guide_Line】** or click “” to edit the guide line of graphics.

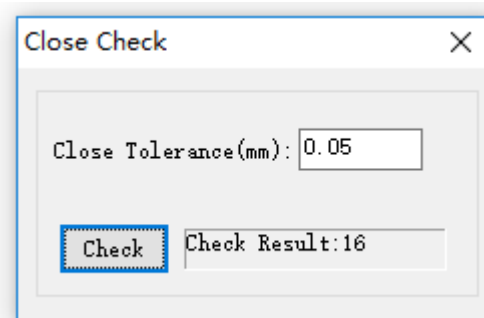
Figure3-6-23 Edit Cutting Guide_Line



3.6.13 Close Check

Click **【Tool】 / 【Close Check】**, input the suitable **【Close Tolerance】**. Then the software will check and select all the graphics according to the close tolerance in current file.

Figure3-6-24 Close Tolerance



3.6.14 Parallel Offset


【Parallel Offset】 is used to expand or indent vector graphics. Select a graphics, click **【Tool】 / 【Parallel Offset】** or click “”. Set the parameters as required, click **【OK】** to generate the parallel line and set up a new layer automatically. If the offset value is positive, the graphics will expand, if the offset value is negative, the graphics will indent inward.

Figure3-6-25 Parallel Offset Parameters

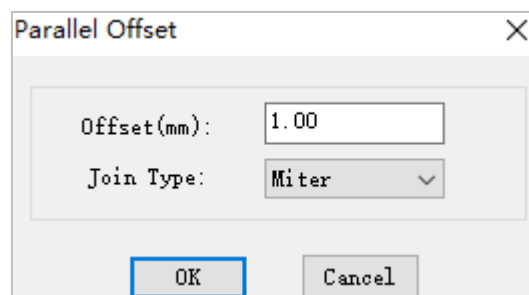


Figure3-6-26 Auto Inner or Outer Offset

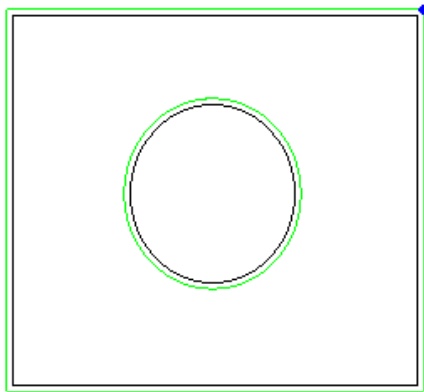
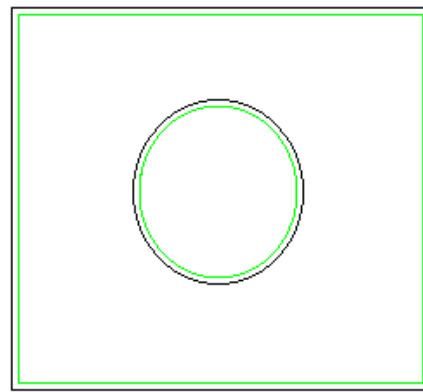


Figure3-6-27 Expand



The join type can be set to “Round”, “Square” or “Miter”. Square: the top angle of graphics turns into a straight line. Round: the top angle turns into an arc. Miter: the top angle doesn’t change, as shown in figure 3-6-35/3-6-36.

Figure3-6-28 Square

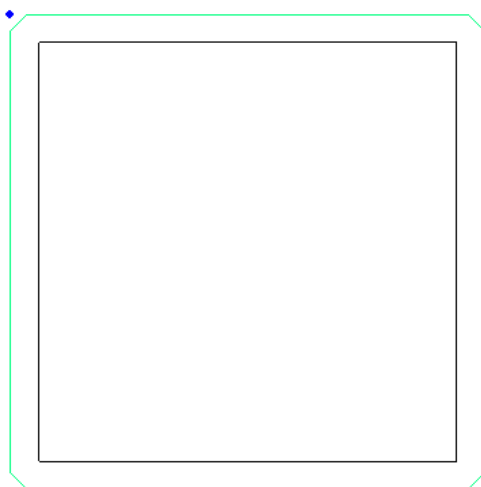
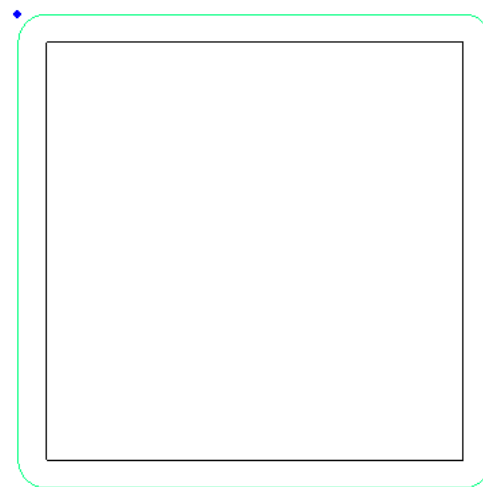


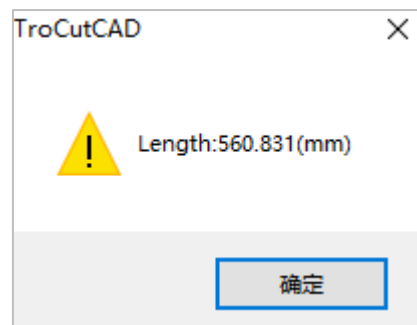
Figure3-6-29 Round



3.6.15 Measure Length

Click **【Tool】 / 【Measure Length】** to measure length of the selected graphics. If select several graphics, then the result is the sum of length.

Figure3-6-30 Measure Length

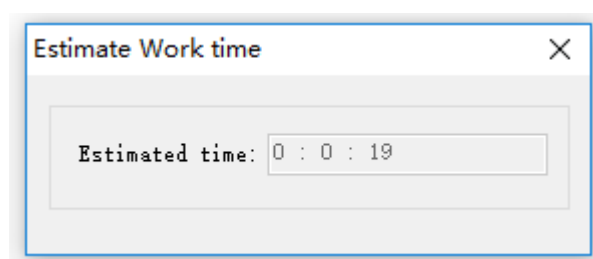


3.6.16 Estimate Work Time

【Estimate Work Time】 will pre-calculate the processing time precisely according the current parameter settings and graphics data size. The calculation will be very precise, with error no more than 1 min even for graphics data with heavy work loading.

Click **【Tool】 / 【Estimate Work Time】** or click "⚙️" to estimate work time of the selected graphics.

Figure3-6-31 Estimate Work Time



3.6.17 Simulate



Click【Tool】/【Simulate】or click “” to simulate the graphics progressing.
Click “+/-” key on keyboard to increase simulating speed, click “-/-” to decrease simulating speed. Click “esc” to quit simulating.

Figure3-6-32 Simulate



3.7 Options

3.7.1 System Options

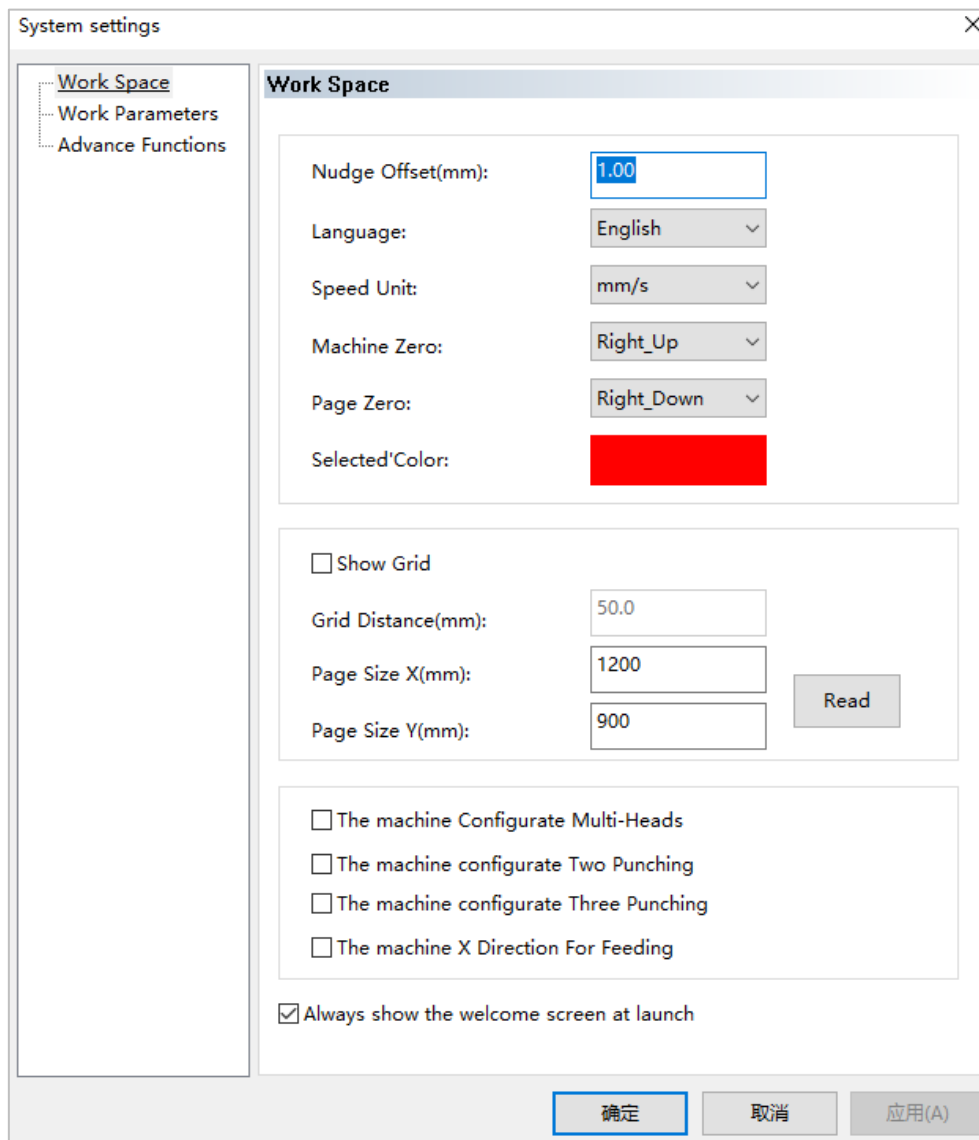
Click 【Options】 / 【System Options】 or click “” to open the system settings interface.

3.7.1.1 Work Space

If need wheel-pressure, spindle or other functions, users need to check 【The machine Configure Multi-Heads】 , and check other options

according to need.

Figure3-7-1 Work Space Parameters



- **Nudge Offset**

The distance which the selected graphics moves when press “←” “→” “↑” “↓” on keyboard.

- **Language**

The language that software uses. After changing the language, you need to restart the software.

- Speed Unit

The unit of all the speed involved in software.

- Machine Zero

The zero point of machine (limit position), the parameter must be consistent with the actual zero point of machine, otherwise the processed graphics may be reversal.

- Page Zero

The zero point in the view.

- Selected Color

The color that the graphics outline displays when the graphics is selected.

- Show Grid

Check this function, the view will show will grid.

- Grid Distance

When the view shows with grid, this parameter is the width of grid.

- Page Size X/Y

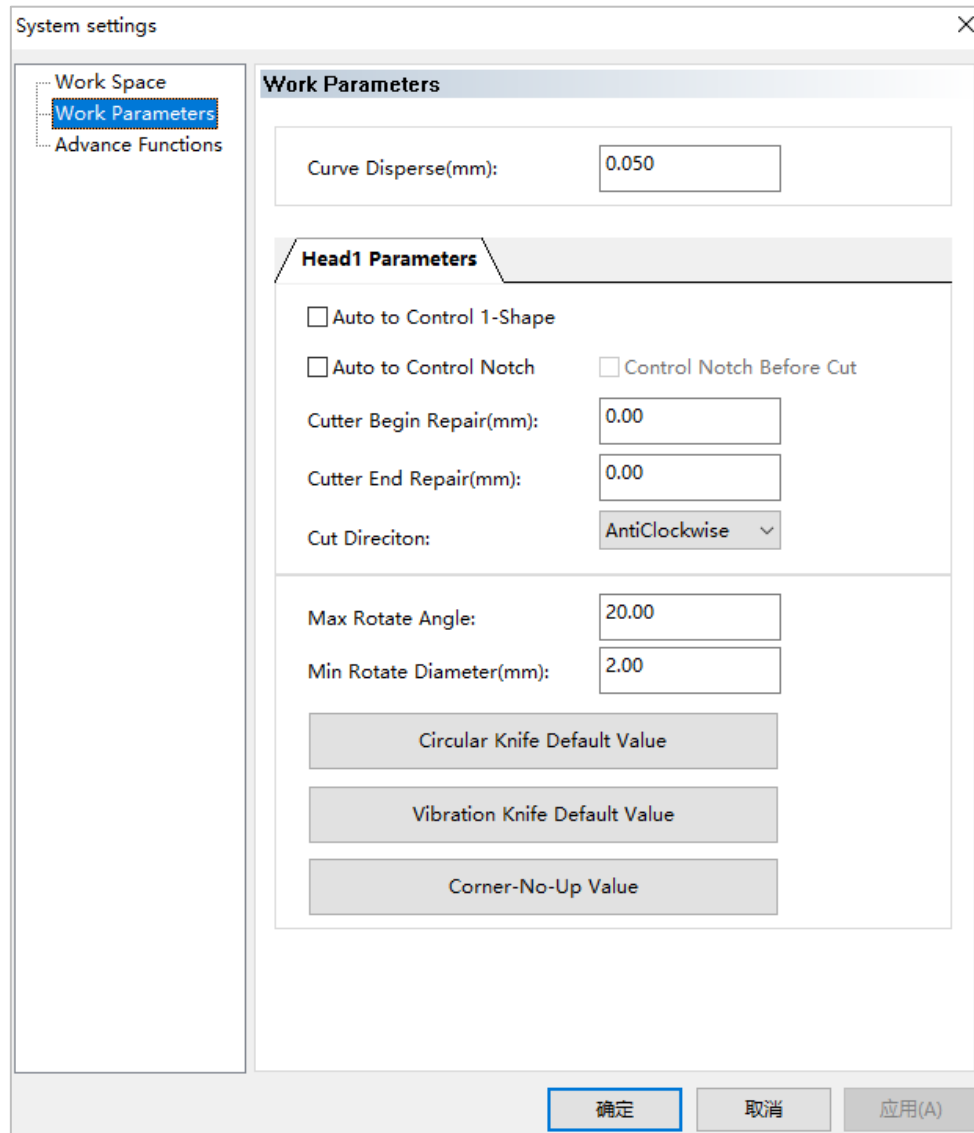
Click **【Read】** to read the work range of machine.

- Always show the welcome screen at launch

When start the software, the welcome screen will be shown in the view.

3.7.1.2 Work Parameters

Figure3-7-2 Work Parameters



- Curve Disperse

Set the smoothness of curve. The smaller the value, the higher the precision of graphics, the slower the calculation speed, it also affects the processing speed. Generally, you can choose a smaller value when cutting plexiglass, and use the default value "0.10" when cutting other

materials.

- **Head1 Parameters**

Because the knife has a thickness, there is a width of the knife, modify the parameters of **【Cutter Begin Repair】** , **【Cutter End Repair】** , the sealing can be connected when cutting rectangle (**【Cutter Begin Repair】** : let the knife advance; **【Cutter End Repair】** : let the knife get up early).

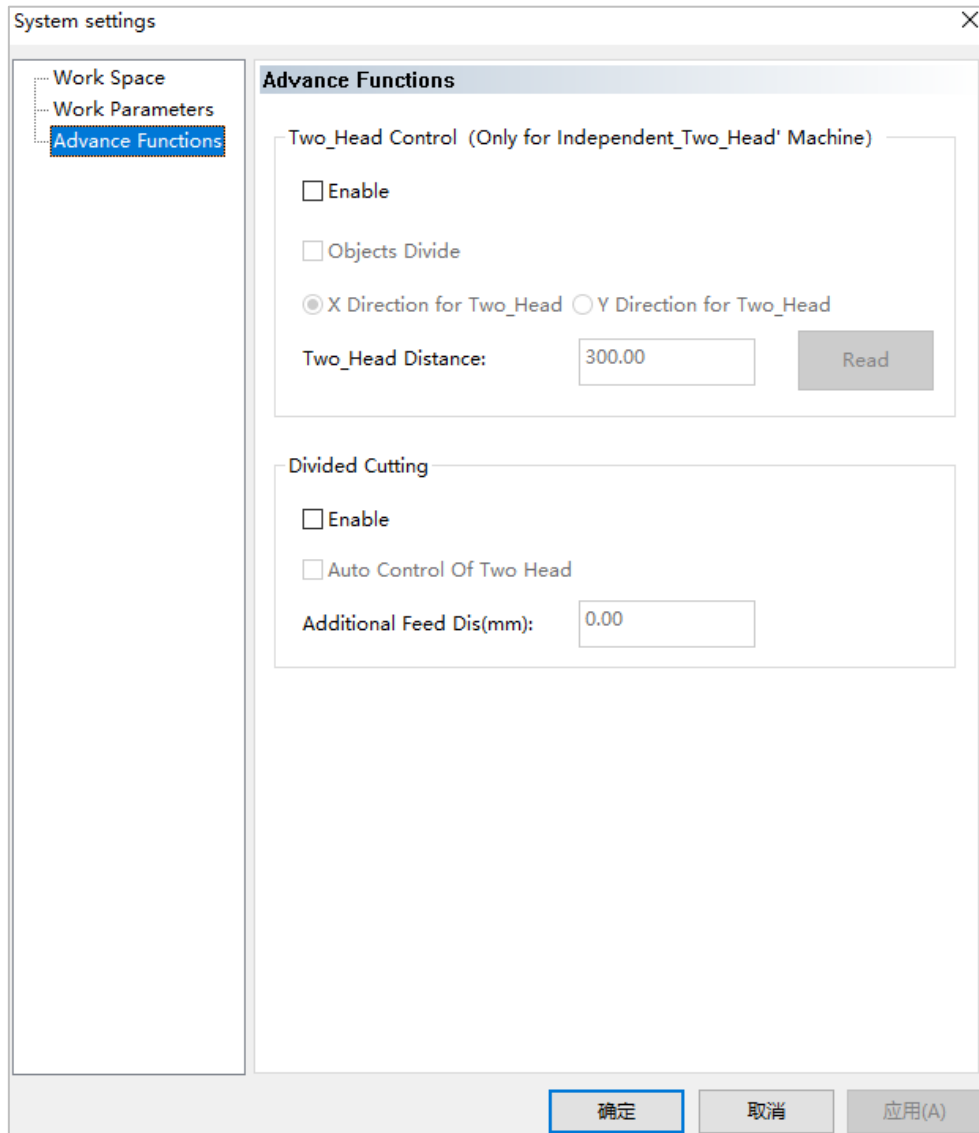
Set the corresponding parameters according to need.

- Click **【Circular Knife Default Value】** / **【Vibration Knife Default Value】** / **【Corner-No-Up-Value】** to change the “Max Rotate Angle”, “Min Rotate Diameter” values.

【Circular Knife Default Value】 refers to the degree at which the machine will raise the tool head and change the angle before cutting the graphics at the corner of the graphics. If **【Circular Knife Default Value】** and **【Vibration Knife Default Value】** are set too small, the cut head will often be raised; if they are set too large, the head will not be raised.

3.7.1.3 Advance Functions

Figure3-7-3 Advance Functions Parameters



1. Two_Head Control (Only for Independent_Two_Head Machine)

a) Enable

Check this function to enable two head control.

b) Objects Divide

When the two heads work asynchronously, check objects divide to

make the two heads cut asynchronously. If this function is not checked, the machine will only work with the main cutting head.

c) X Direction for Two_Head

Select according to the installation direction of machine beam.

d) Y Direction for Two_Head

Select according to the installation direction of machine beam.

e) Two_Head Distance

The distance between two heads.

2. Divided Cutting (Only for Feeding Machine)

a) Enable

Check to enable divided cutting function.

b) Auto Control of Two Heads

Check to enable auto control of two heads function.

c) Additional Feed Dis

Before the formal processing, customers conduct trial processing, observe the error of feeding once, and set the corresponding compensation.

3.7.2 Array Output Options


For the graphics that need to be processed by array, the automatic layout can be set through array parameter settings, avoiding layout of manual calculation, reducing workload and saving materials. Click **【Options】** / **【Array output options】** or click “” to set array parameters.

Figure3-7-4 Array Output Options

Array output options [X]

Auto_conver Calculation

Cell height(Y): 0.00

Cell width(X): 0.00

Height(Y): 0.00

Width(X): 0.00

Count(Y): 1

Count(X): 1

☒ Odd Interval(Y): 0.00 [Auto]

☐ Even Interval(Y): 0.00

☐ Odd Interval(X): 0.00 [Auto]

☐ Even Interval(X): 0.00

☐ Offset(X): -0.00 [Auto]

☐ Offset(Y): -0.00 [Auto]

Pulse Distance: 1.00

Up

Left Right

Down

Line Mirror

☐ X ☐ Y

Row Mirror

☐ X ☐ Y

Convert To Solidline

F2: Zoom to Objects

F4: Zoom to page

Click **【Auto cover Calculation】**, the TroCutCAD software can cover the whole platform automatically with the selected graphics according to the work range and graphics size, by the most economical consumable way.

Figure3-7-5 Auto Cover Calculation Settings

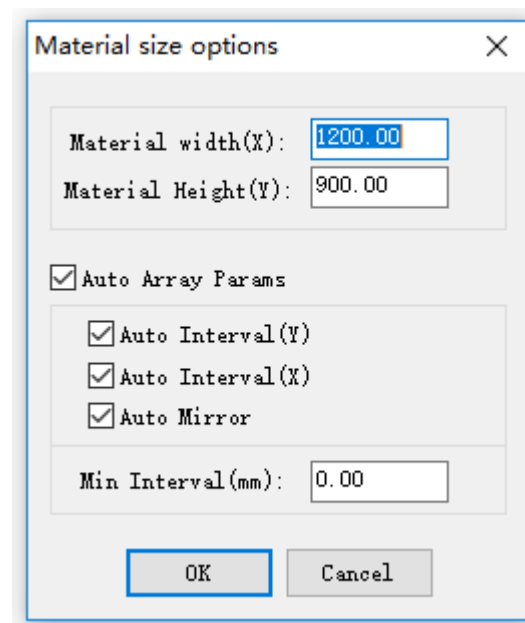


Figure3-7-6 Array Parameters

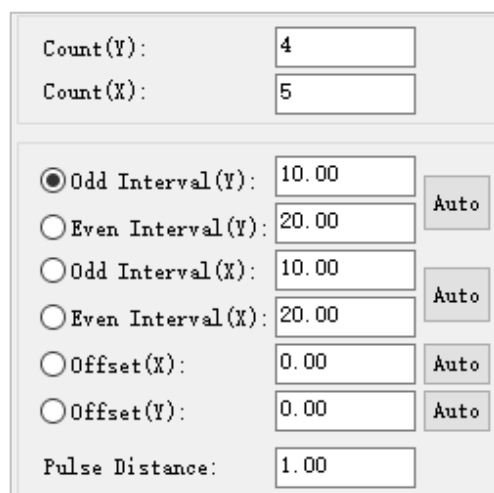
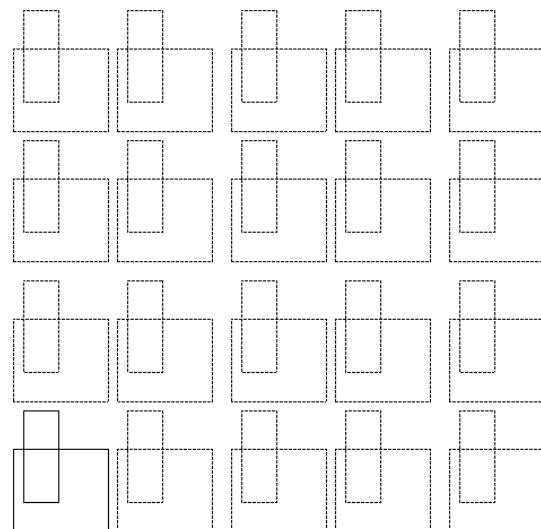


Figure3-7-7 Array Graphics



Set up an array, the parameters set as Figure 3-7-6. Check **【Line Mirror X/Y】** , **【Row Mirror X/Y】** , there are some figures for example, users can try more different combinations, like “Line Mirror X & Row Mirror X” etc.

Figure3-7-8 Line Mirror X

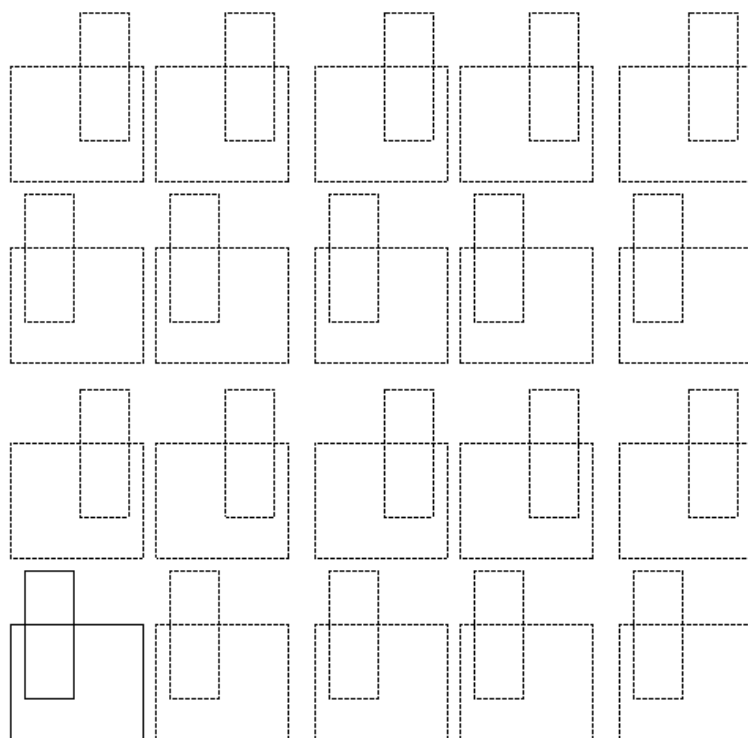


Figure3-7-9 Line Mirror Y

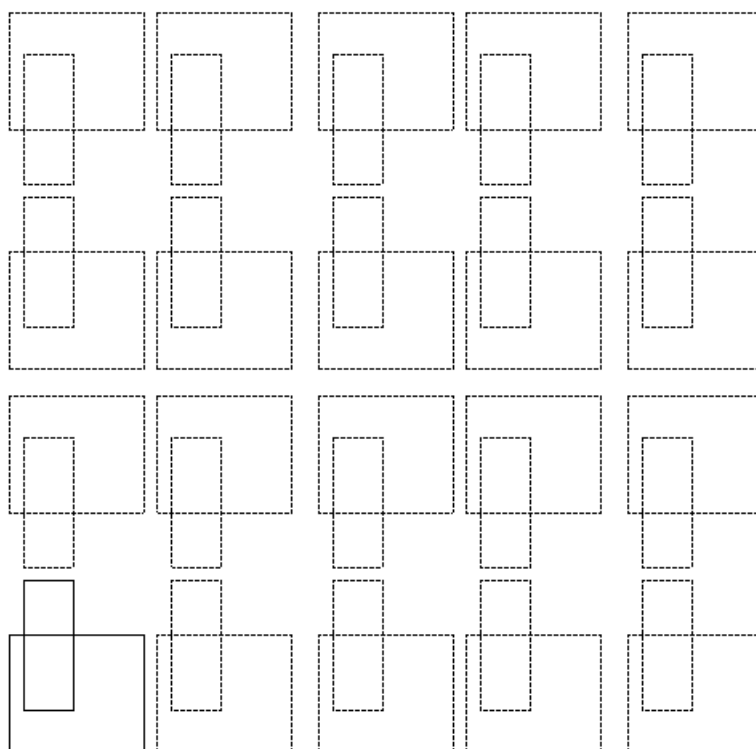


Figure3-7-10 Row Mirror X

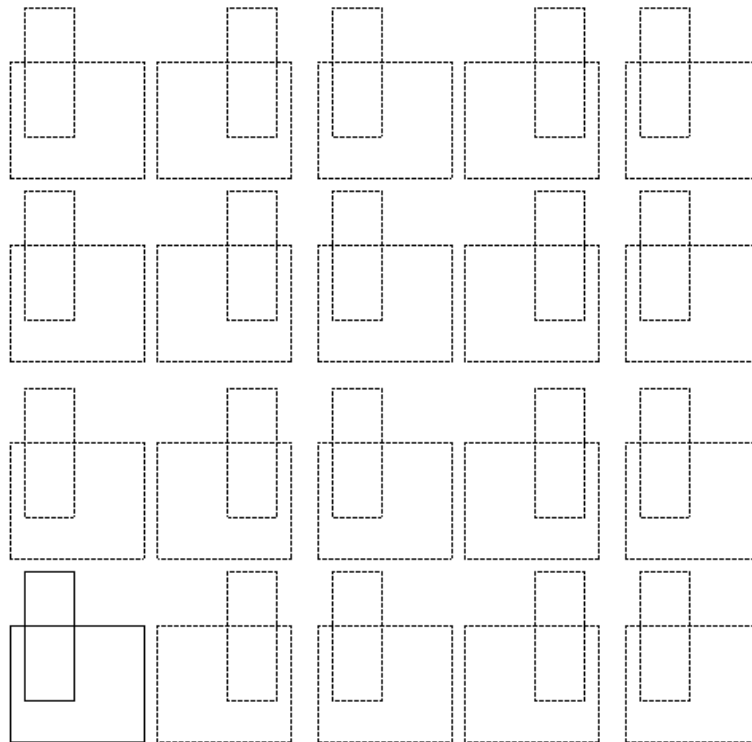


Figure3-7-11 Row Mirror Y

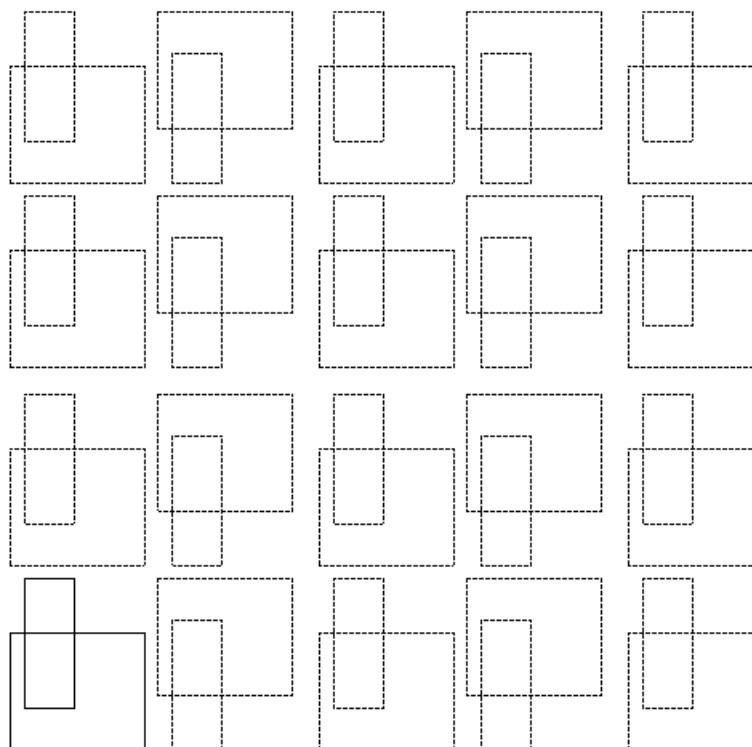


Figure3-7-12 Line Mirror X & Y

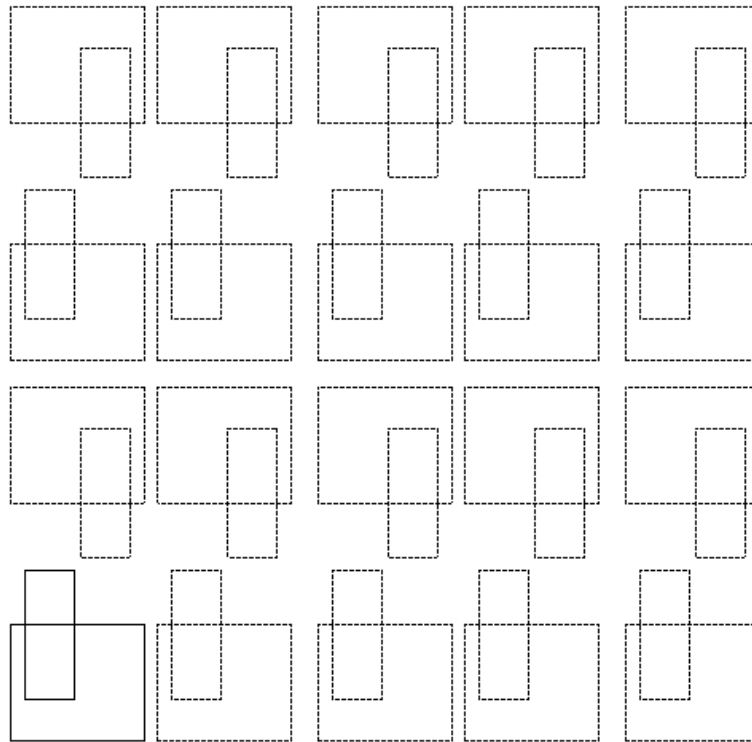
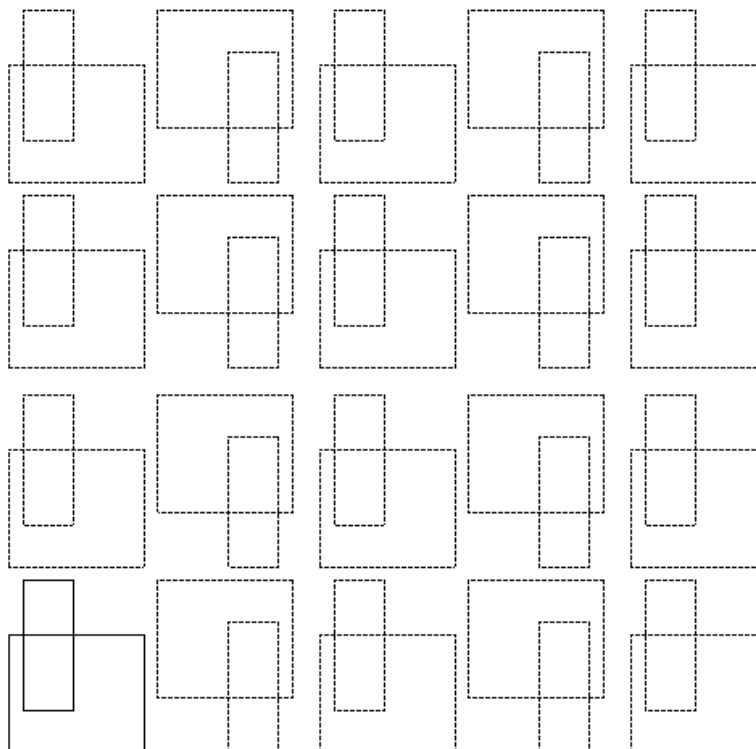


Figure3-7-13 Row Mirror X & Y



Set **【Pulse Distance】** , then click **【Up】** , **【Down】** , **【Left】** or **【Right】** , the relevant interval will increase or decrease.

For example, set the **【Pulse Distance】** to “10”, then click **【Up】** one time, then the odd interval will change to “20”.

Figure3-7-14 Pulse Distance

The dialog box for Pulse Distance configuration includes the following elements:

- ☒ Odd Interval(Y): 10.00 [Auto]
- ☐ Even Interval(Y): 20.00 [Auto]
- ☐ Odd Interval(X): 10.00 [Auto]
- ☐ Even Interval(X): 20.00 [Auto]
- ☐ Offset(X): 0.00 [Auto]
- ☐ Offset(Y): 0.00 [Auto]
- Pulse Distance: 10
- Directional buttons: Up, Down, Left, Right

3.7.3 Position Relative


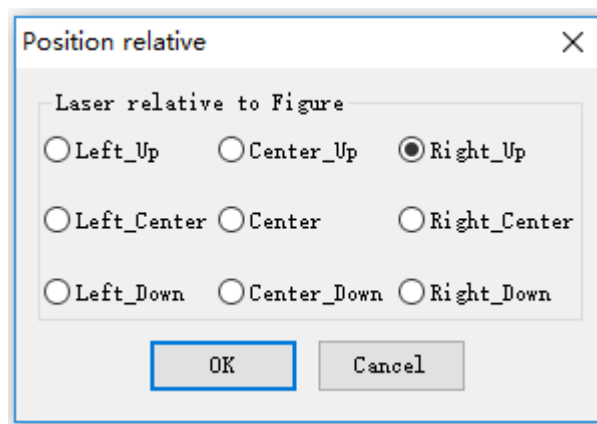
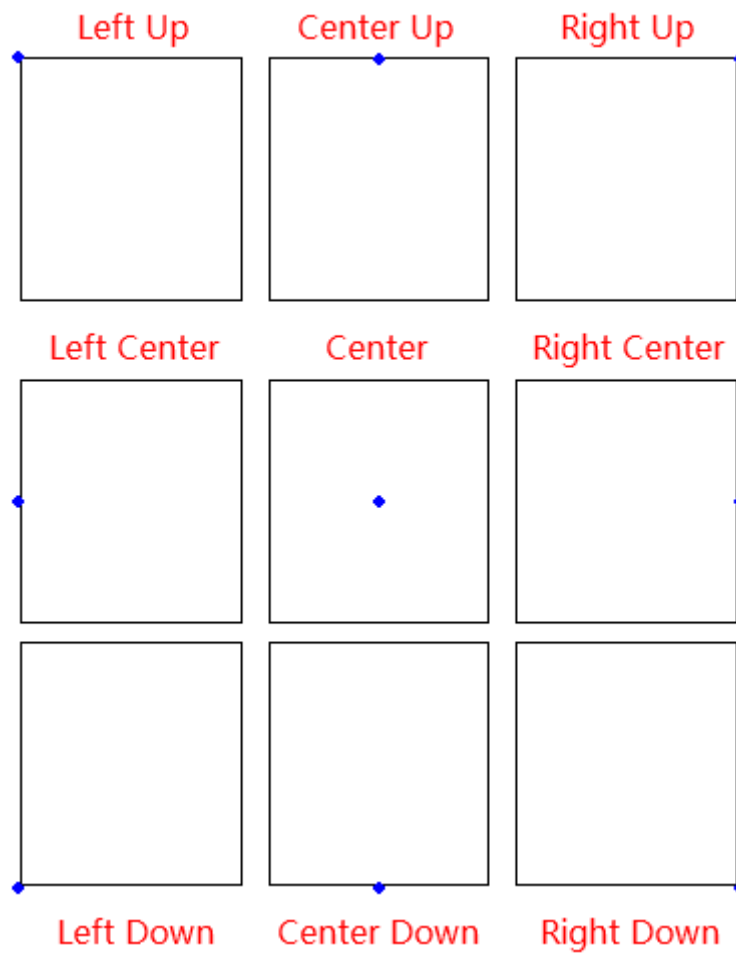
【Position Relative】means relative position between the graphics and the cutting head. Click 【Options】 / 【Position Relative】 or click “” to open the relative position setting page. Check the required relative position and click “OK”.

Figure3-7-15 Position Relative



The relative positions are shown below.

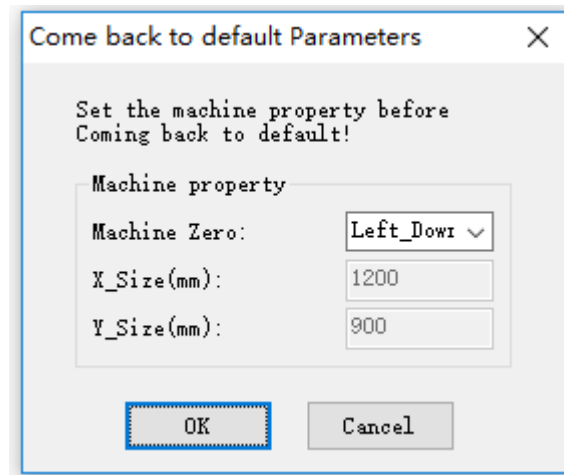
Figure3-7-16 Relative Positions



3.7.4 Default Parameters

When restoring the default parameters of software, set the accurate machine origin and click “OK”.

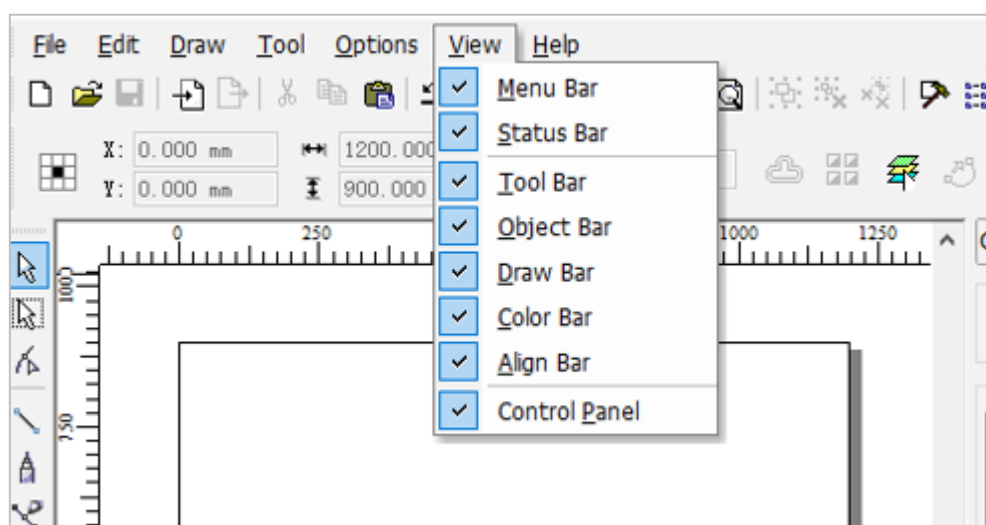
Figure3-7-19 Default Parameters



3.8 View

View menu is used to bring up or hide toolbars.

Figure3-8-1 View



When the menu bar is not hidden, you can click **【View】** and check the corresponding options to bring up the toolbar. If all the toolbars are hidden, you can click the right button of mouse on the blank of the status bar and select the corresponding options to display the hidden toolbar.

Figure3-8-2 Display & Hide the Toolbar

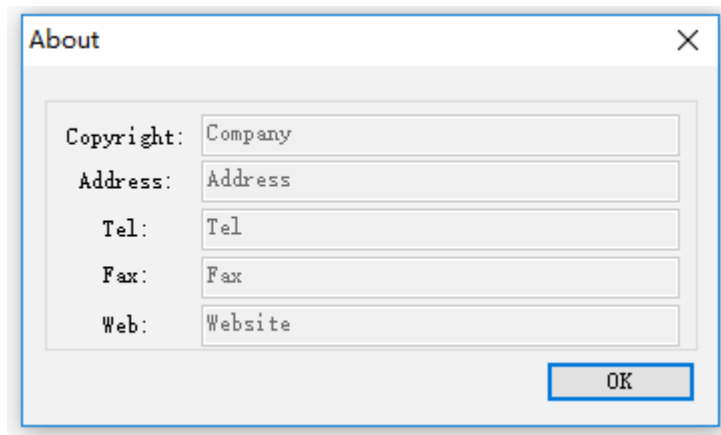


3.9 Help

3.9.1 About

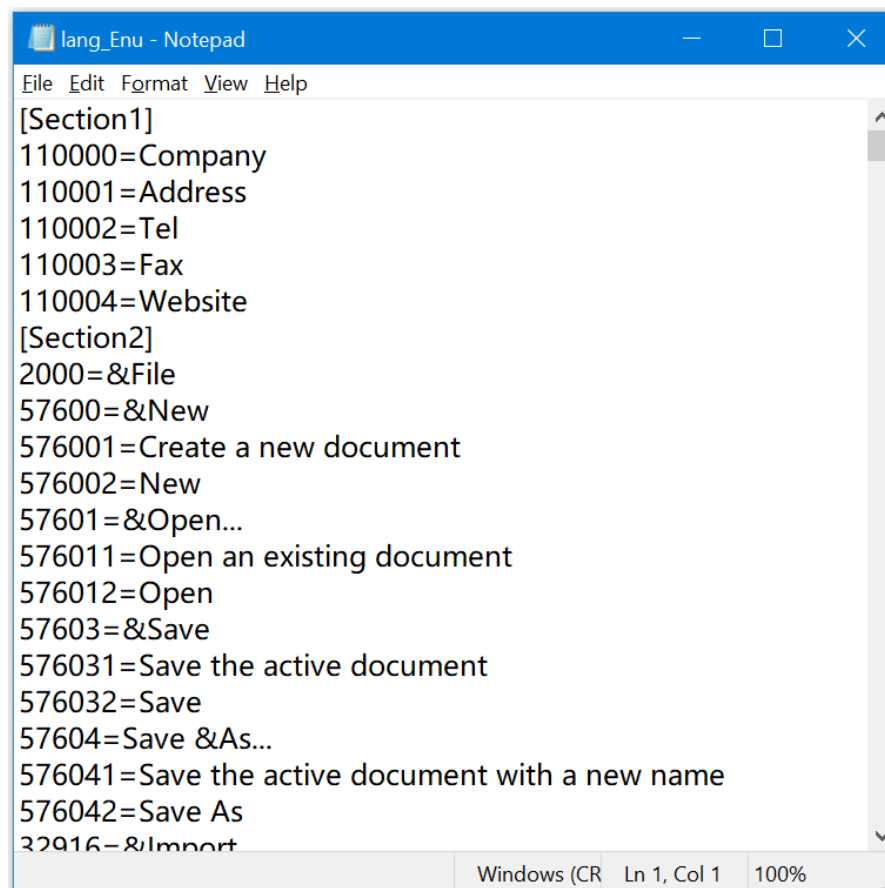
Manufacturers can customize the information about the software package, and the initial information is shown as figure 3-9-1.

Figure3-9-1 About



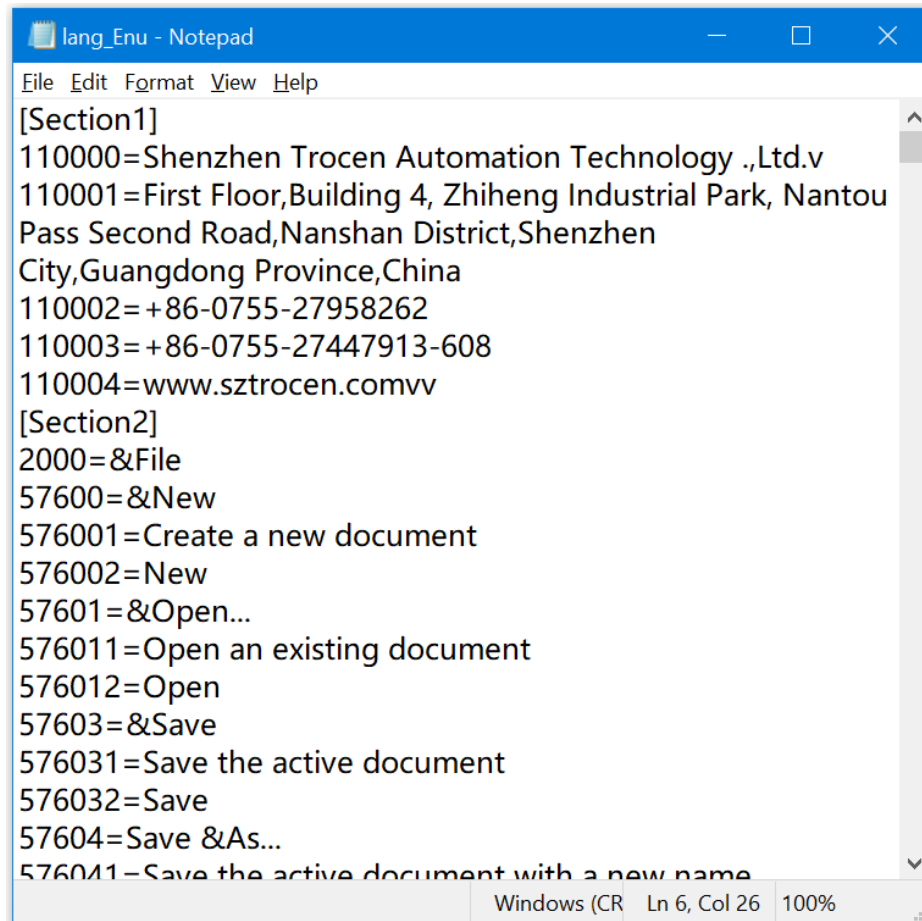
Enter the software installation package directory, open the “AWCLanguage” folder, and double-click to open the “lang_Enu” file, as shown in figure 3-9-2.

Figure3-9-2 lang_chs File



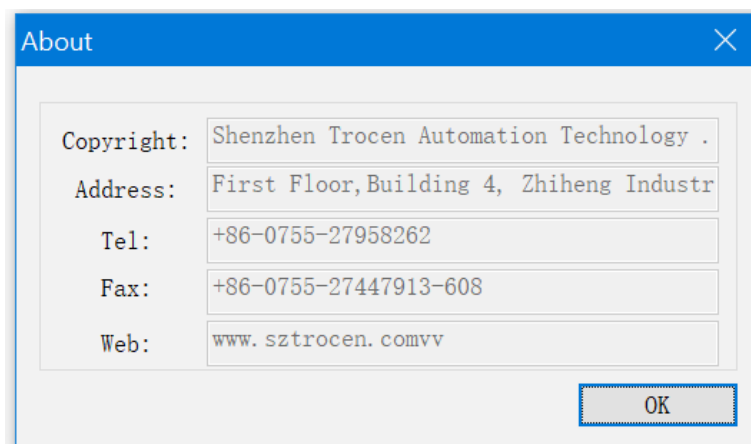
Modify the information in lang_chs file according to need.

Figure3-9-3 Modify lang_chs File



Restart the software, click **【About】** .

Figure3-9-4 About Info



3.9.2 Modify Icon

Manufacturers can replace the icon of the software. Enter the software installation directory, open “AWCRes” folder, name the prepared icon with “title” and replace the original icon file. The software icon is 32*32 px in size and its suffix is “ico”.

4. Control Panel

Computers can communicate with mainboard by USB and network to operate the cutting machine.

4.1 Communicate by USB

Click **【Select Mode】** on the Control Panel.

Figure4-1-1Control Panel



Select **【USB Mode】**, double-click the position in the red box as shown in Figure4-1-2 to open the USB Com interface. Users can set the

【DeviceName】 as their like, then click 【FindCom】 . If the connection fails, the system prompt is shown in Figure4-1-4.

Figure4-1-2 USB Mode

The 'Select Mode' dialog box has a close button (X) in the top right corner. It contains two radio buttons: 'USB Mode' (selected) and 'Network Mode'. Each radio button has associated 'Add', 'Delete', and 'Modify' buttons. Below the 'USB Mode' section is a table with two columns: 'DeviceName' and 'COM'. The first row is highlighted with a blue background and a red border, showing 'MachName' under 'DeviceName' and '1' under 'COM'. Below the 'Network Mode' section is a table with two columns: 'DeviceName' and 'IP'. The first row is highlighted with a blue background, showing 'MachName' under 'DeviceName' and '192.168.8.8' under 'IP'.

	DeviceName	COM
<input checked="" type="checkbox"/>	MachName	1

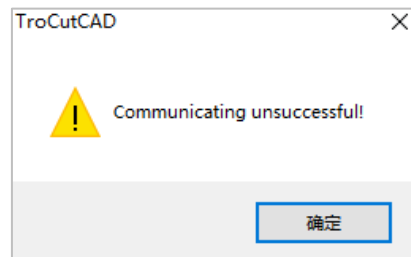
	DeviceName	IP
<input checked="" type="checkbox"/>	MachName	192.168.8.8

Figure4-1-3 FindCom

The 'Select Mode' dialog box is shown with the 'USB Mode' radio button selected. A sub-dialog box titled 'USB Com' is open in the foreground. It contains two text input fields: 'DeviceName' with the value 'MachName' and 'USB COM' with the value '_AWC_0500001102C'. There is a 'FindCom' button next to the 'USB COM' field. At the bottom of the 'USB Com' dialog are 'OK' and 'Cancel' buttons. The background 'Select Mode' dialog shows the same table structure as in Figure 4-1-2.

	DeviceName	COM
<input checked="" type="checkbox"/>	MachName	1

Figure4-1-4 Communicating Unsuccessful



4.2 Network Mode

4.2.1 Communicate by Network

Select **【Network Mode】**, double-click any position in the red box as shown in Figure4-2-1 to open the Device Ip interface. Users can set the **【DeviceName】** as their like, then input the default IP address of mainboard with “192.168.8.8”.

Figure4-2-1 Network Mode

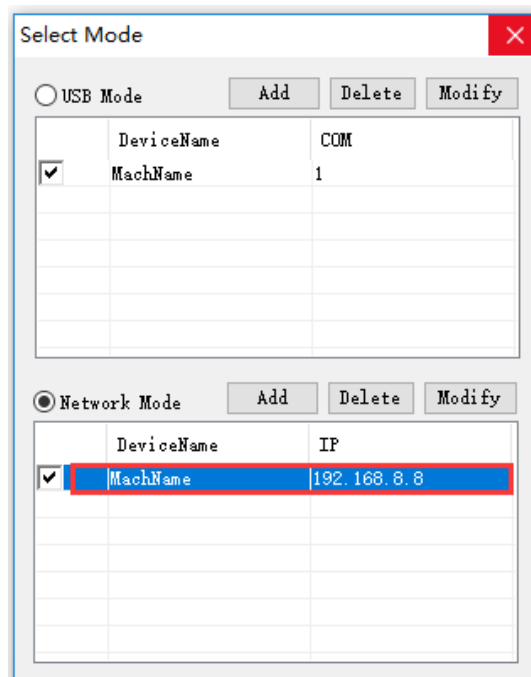
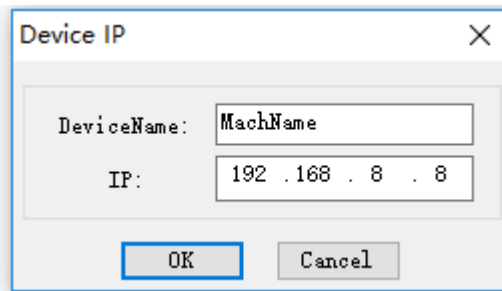


Figure4-2-2 Modify Ip Address



4.2.2 Modify the IP Address of Computer

Take Windows10 system as an example to explain how to modify computer IP address. Click Network & Internet Settings→Change Adapter Options → double-click WLAN → Properties → double-click Internet protocol version 4 (TCP/IPv4). Chose “Use the following IP address” and enter the IP address. The first 3 segments must be the same as the IP address of mainboard (192.168.8.x). The last segment of the IP address can be selected as any number between 0-255 except “8”.

Figure4-2-3 Network & Internet Settings

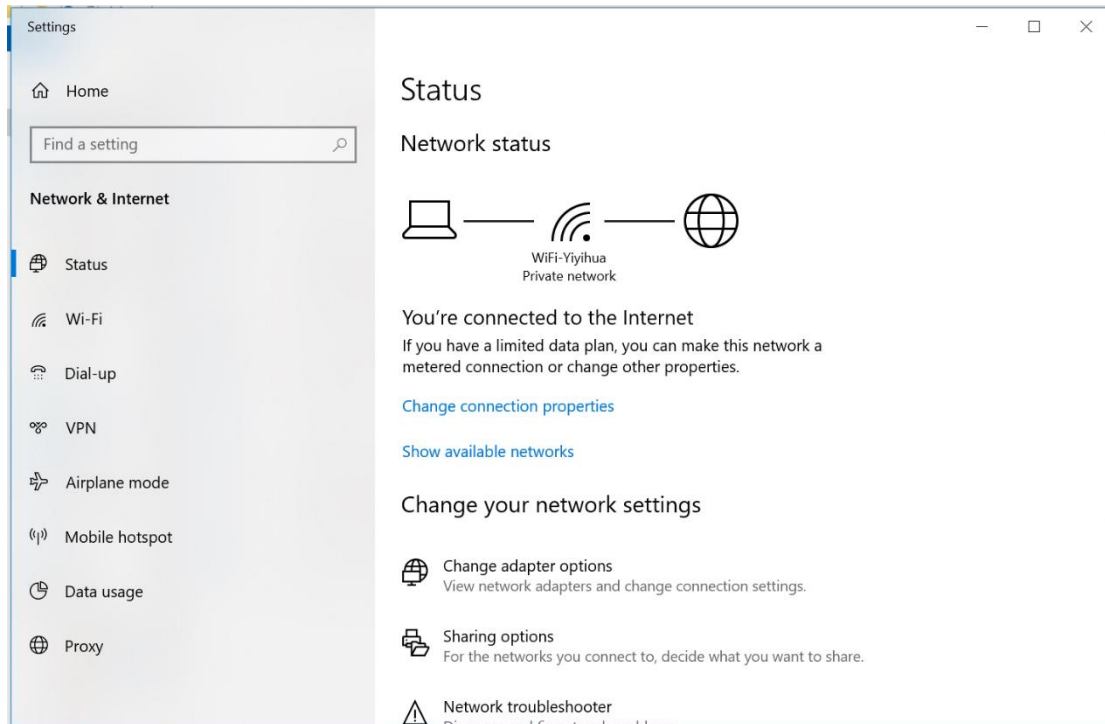


Figure4-2-4 Change Adapter Options

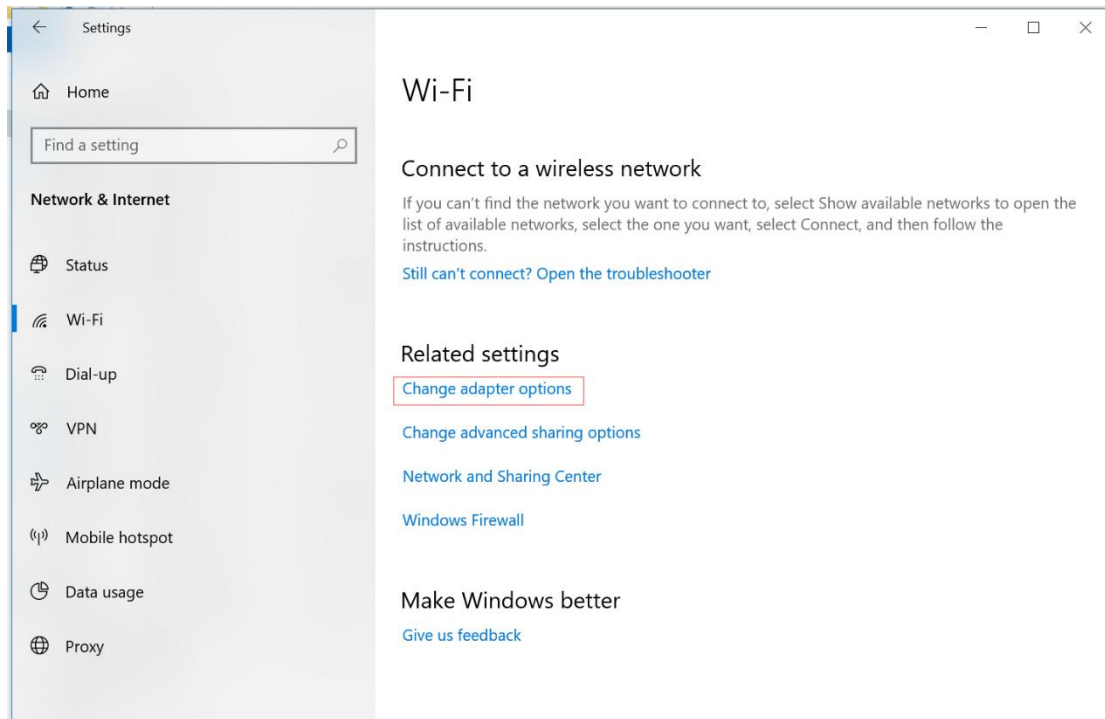


Figure4-2-5 WLAN Properties

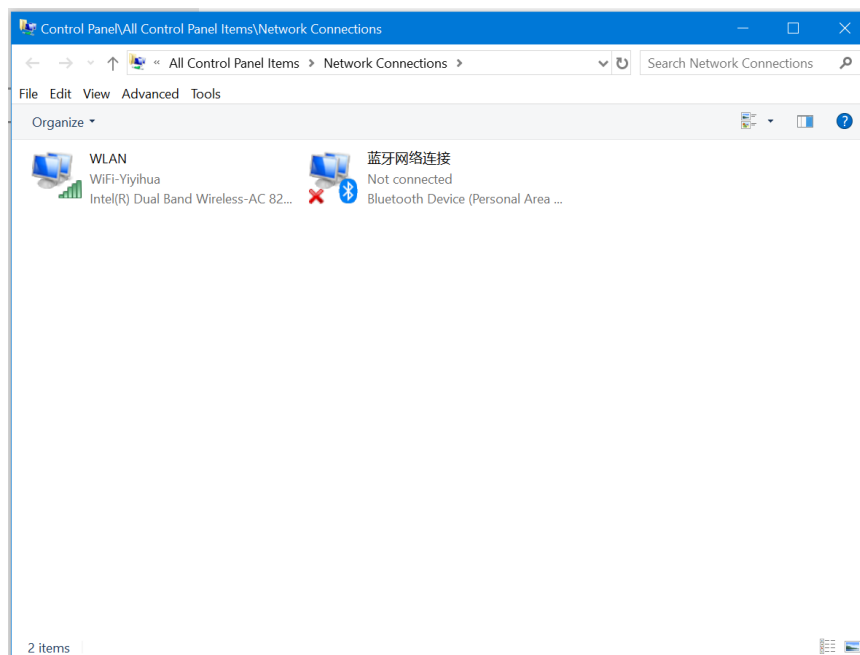


Figure4-2-6 Internet protocol version 4 (TCP/IPv4)

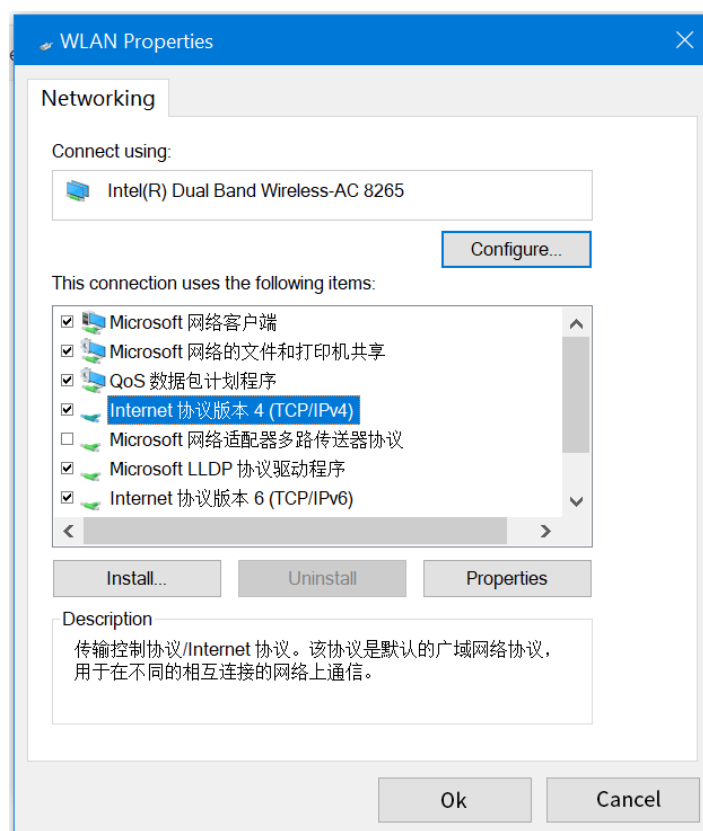
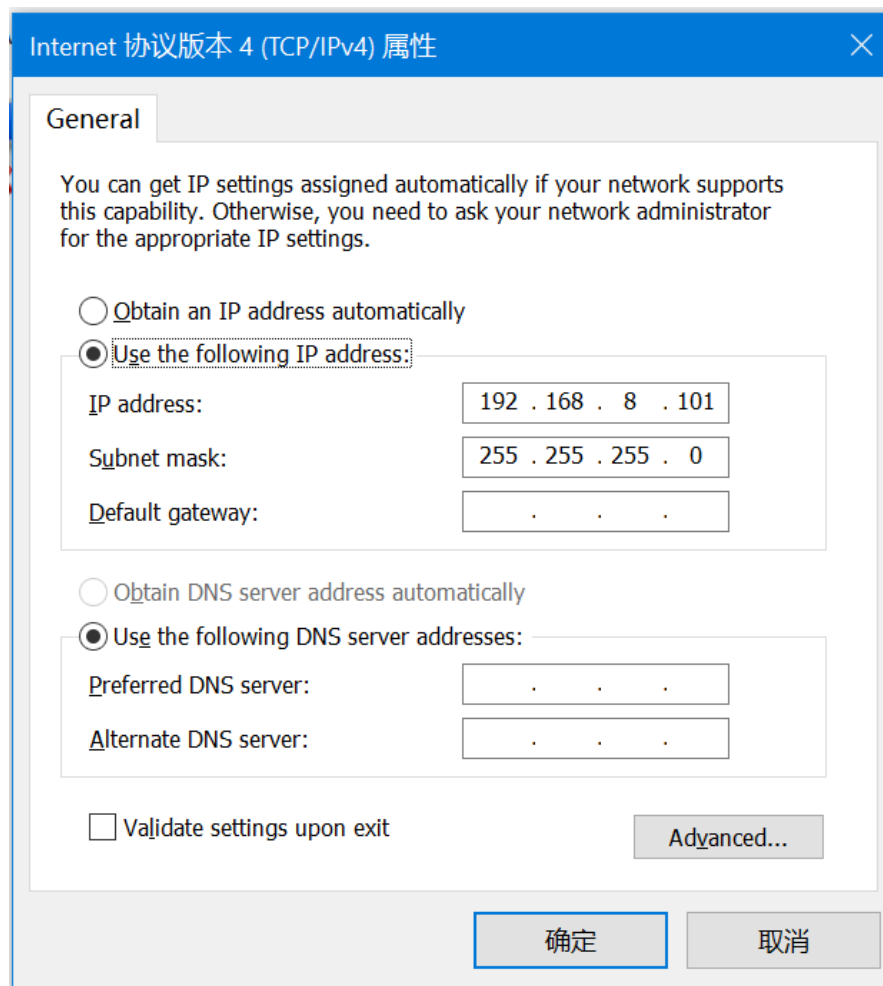


Figure4-2-7 Modify IP Address



4. 2. 3 Check IP Address

Take Windows10 system as an example to explain how to check the computer IP address. Click Network & Internet Settings→Change Adapter Options→double-click WLAN→Details....

Figure4-2-8 Network & Internet Settings

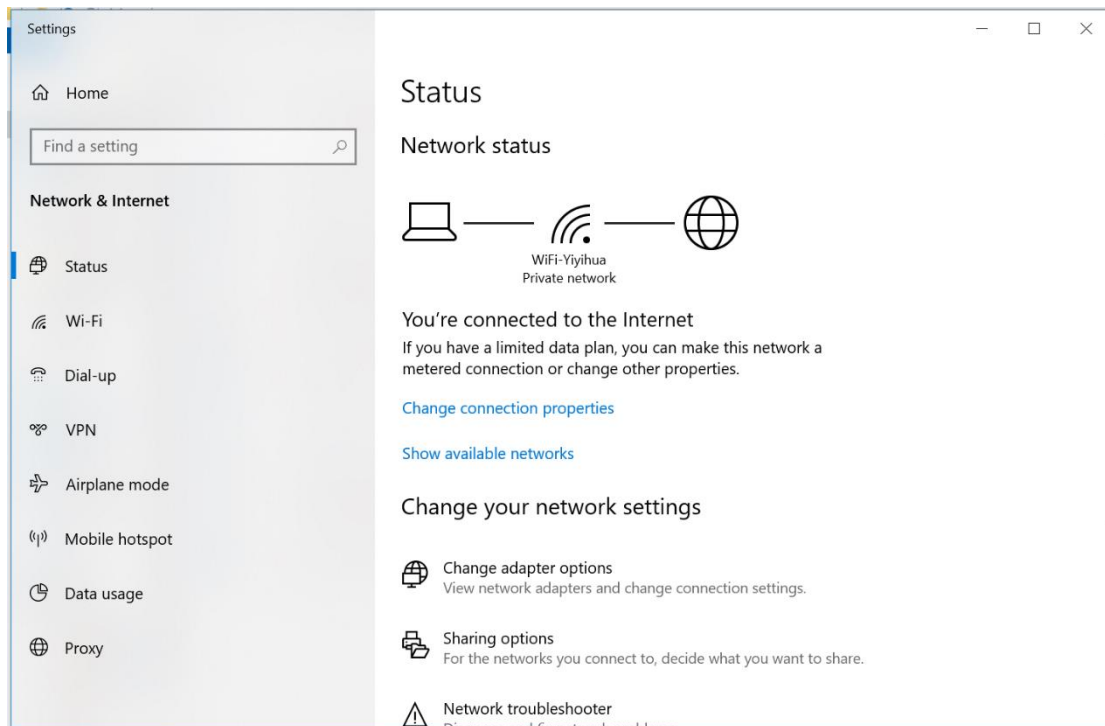


Figure4-2-9 Change Adapter Options

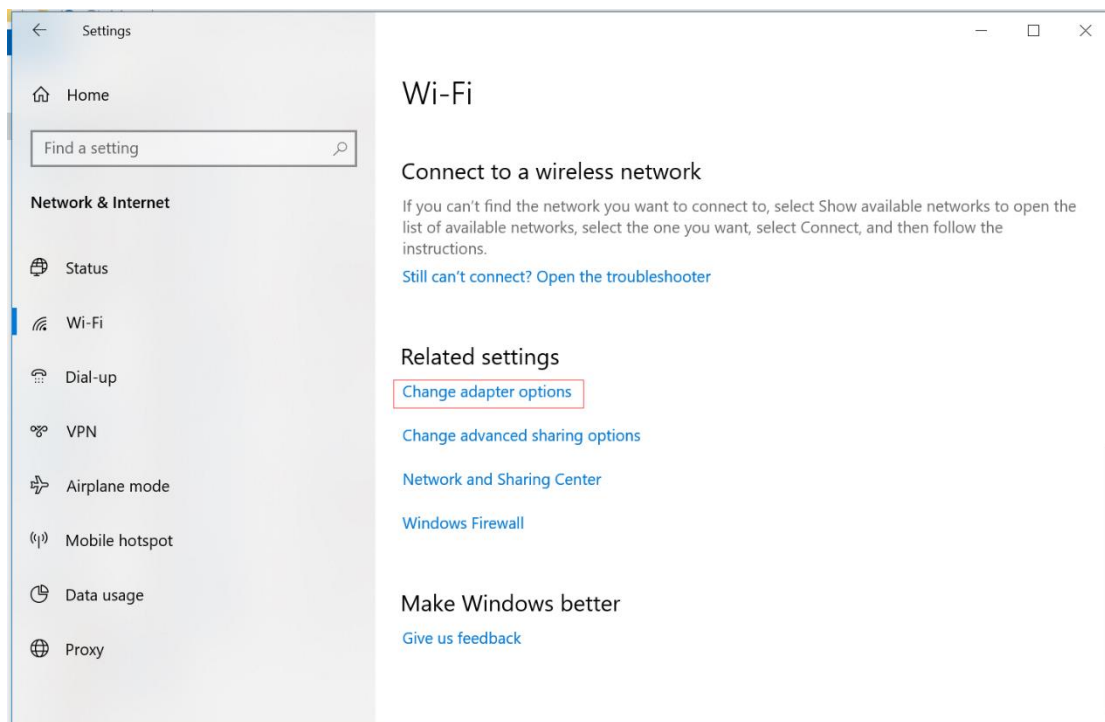


Figure4-2-10 WLAN Properties

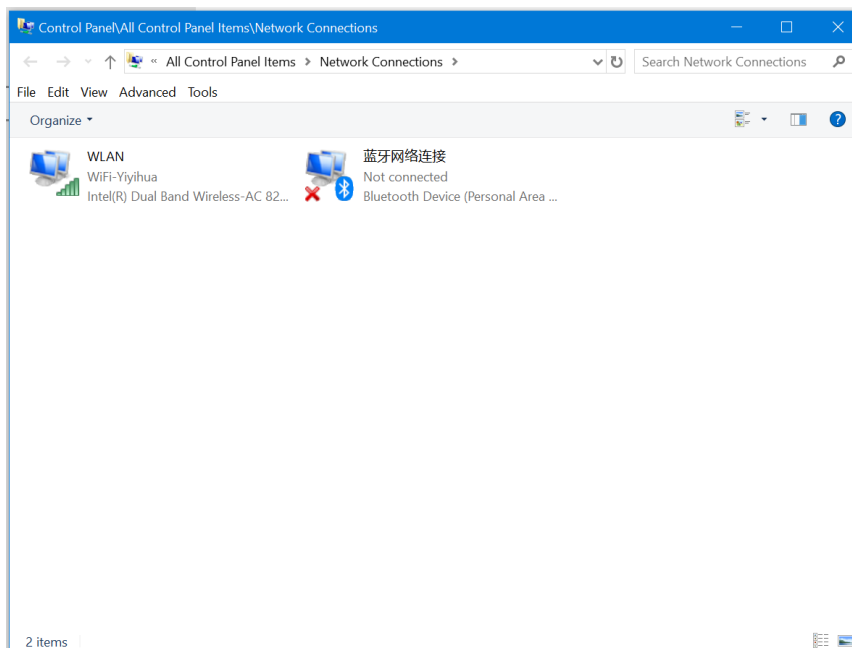
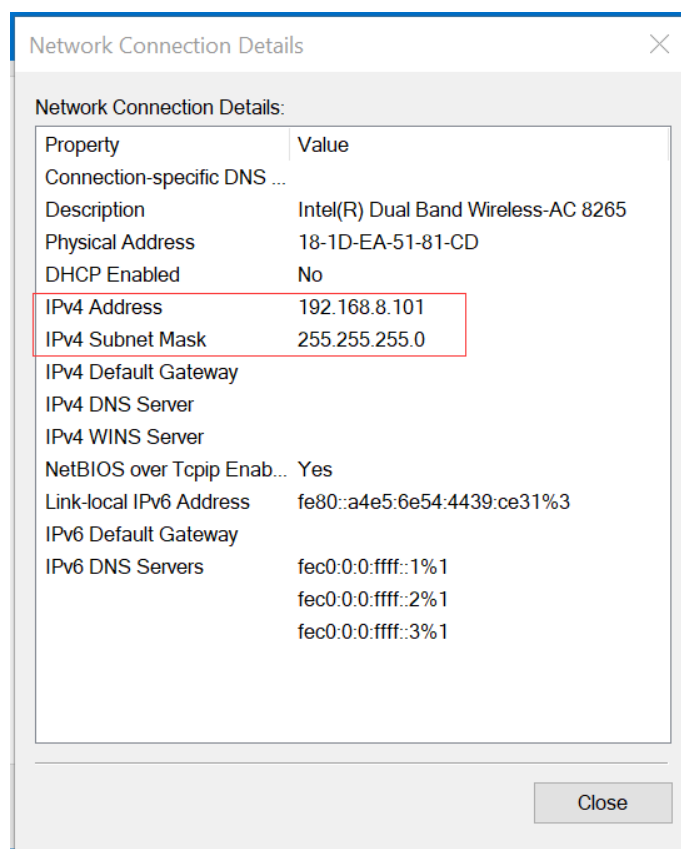


Figure4-2-11 Detail

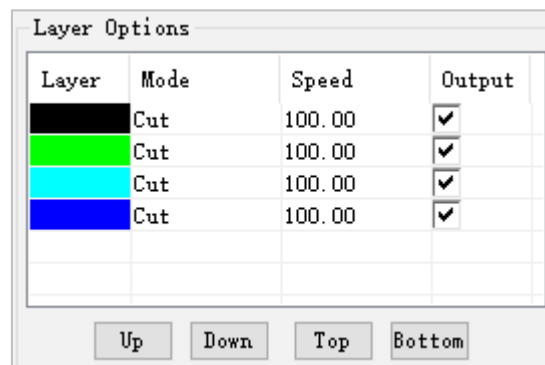


4.3 Layer Options Settings

4.3.1 Layer Options

Check **【output】** to select whether the layer should be processed. “☒” indicates the layer output, and “☐” indicates the layer is not output. Double-click any position in the red box to open the layer parameter setting interface.

Figure4-3-1 Select the Processed Layer



If need wheel-pressure, spindle or other functions, users need to check **【The machine Configure Multi-Heads】** , and check other options according to need on the work space interface.

Figure4-3-2 Layer Parameter Settings

Pen	Color
0	Black
1	Red
2	Green
3	Blue

Layer: [Red]

Work Mode: Cut

Speed: 100.00

Cut Parameters

☒ Head1 Work ☐ Wheel-Pressure
☐ Head2 Work ☐ Spindle
☐ Head3 Work ☐ V-Shaped
 V-Shaped Width(mm): 8.00

☐ Knife Lib Params Knife Lib Manage...
 Knife Name: []

Hole Parameters

☐ Micro Punching ☒ Small Punching
 ☐ Big Punching
☒ If Center Hole
 Interval(mm): 3.00

Pen Parameters

Begin Delay(s): 0.300
 End Delay(s): 0.300

OK Cancel

1. Layer

Displays the layer that users want to change the parameters. Click the layer bar on the left to switch layer.

2. Work Mode

Set the processing mode: Cut, Hole, Pen.

3. Speed


Set the cutting speed of the current layer.

4.3.2 Other Parameters

Users can set the parameters of Cut Parameters/Hole Parameters/Pen Parameters according to need. When the Work Mode is Hole, the Hole Parameters is in use. When the Work Mode is Pen, the Pen Parameters is in use.

4.3.3 Adjust Layer Processing Order

Processing sequence in layer list is from top to bottom. If need to change the processing sequence, just need to select one row of them and then

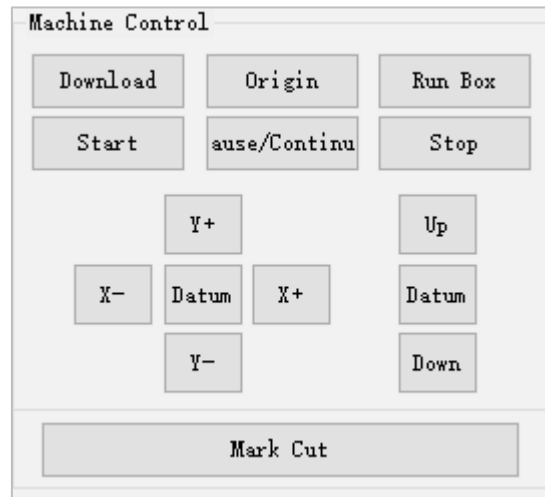
click “     ”.

Only when the **【Order by layer】** function is selected from **【Automatic Order】** , the layer working sequence can be available.

4.4 Machine Control

【 Machine control 】 is used to finish downloading graphics, start processing and do some simple machine operation control.

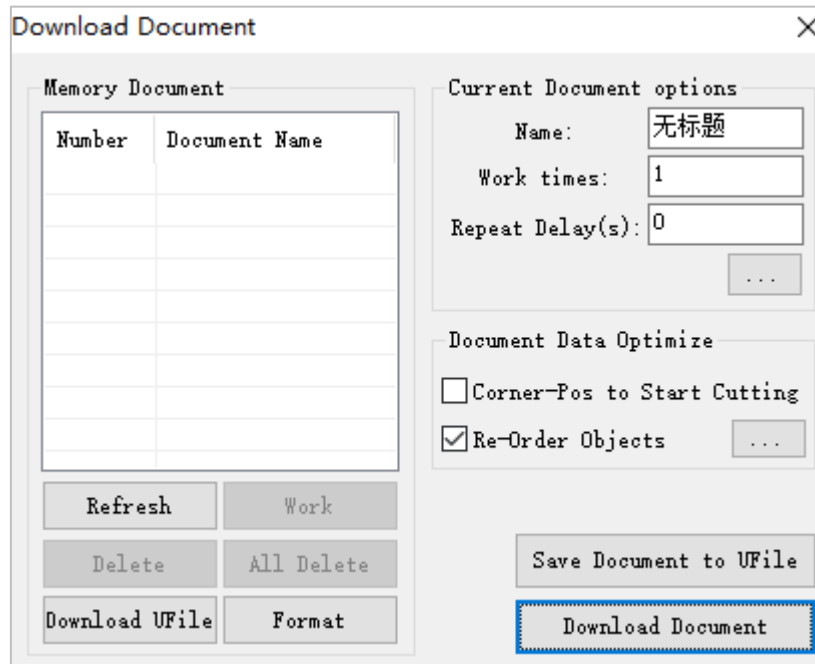
Figure4-4-1 Machine Control



4.4.1 Download

Click **【Download】** to open Download Document interface.

Figure4-4-2 Download Document



1. Current Document Options

1) Name

Document name to be downloaded to main board.

2) Work times

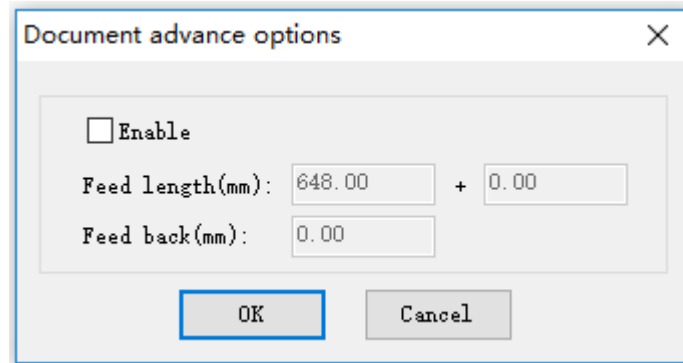
The times of system repeating processing the document automatically when started.

3) Repeat Delay

When repeat processing, the time interval from one processing to the next.

2. Click “...” to set document advance options.

Figure4-4-3 Document Advance Options



Check **【Enable】** to start the feeding function.

- 1) Feed length: The moving distance of feeding axis after work completed one time. The default length is the same as graphics size, and users can input values in “+ 0.00” to add feed length.
- 2) Feedback: Input values in “Feed back(mm): 0.00” to decrease the feed length.

3. Document Data Optimize

1) Corner-Pos to Start Cutting

Check this option, the machine will start to cut at the corner.

2) Re-Order Objects

System will apply **【Automatic Order】** to document data when this option is selected. Click “...” to open automatic order interface.

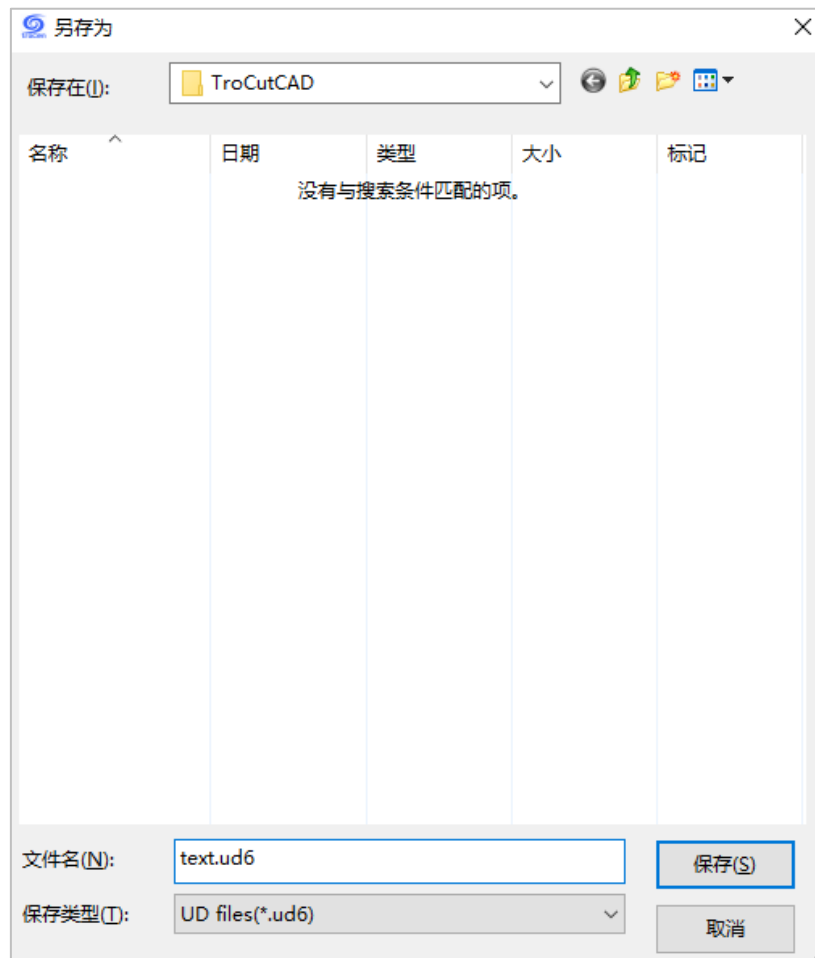
[The more detail about automatic order, please refer to the Chapter3.6.6.](#)

4. Document Export

1) Save Document to UFile

Click **【Save Document to UFile】** and input file name, click **【OK】** to save current file to UFile, the suffix is “UD6”.

Figure4-4-5 Save Document to UFile



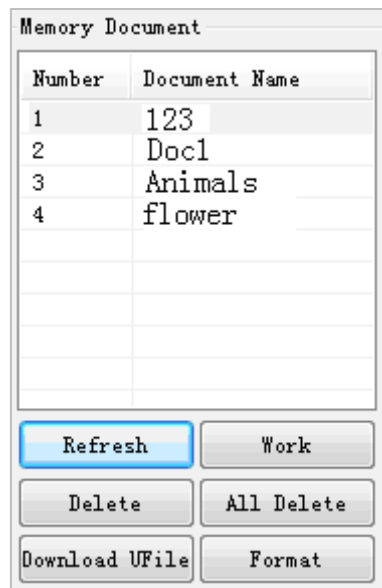
2) Download Document

Click **【Download Document】** to download current file to mainboard by USB or network communication.

5. Memory Document

Memory the files saved in mainboard.

Figure4-4-6 Memory Document



1) Refresh

Check all files saved in the mainboard.

2) Work

Select one file in the file list, click **【Work】** to start the work.

3) Delete

Select one file in the file list, click **【Delete】** to delete the file in the mainboard.

4) All Delete

Delete all files saved in the mainboard.

5) Format

Format mainboard memory. All files saved in mainboard will be lost.

6) Download UFile

Download offline files (ud5 file) saved in computer to the

mainboard. Click **【Download UFile】** , select the file to be loaded to mainboard, then click **【OK】** .

4.4.2 Other Machine Control

1. Origin

Set the current cutting head position as origin.

2. Run Box

The cutting head will run a rectangle in the outer space of the graphics at a certain distance according to the size of the processed graphics. This function is mainly used to confirm the real position of workpiece to be processed.

3. Start

Start work for the current selected file in control panel.

4. Pause/Continue

Click **【Pause/Continue】** to suspend or continue the work.

5. Stop

Stop working of machine.


6. Datum

Click the button, the cutting head or (z-axis) will move to machine origin, when reach the limit position of machine, it will move to located position. This function can get rid of accumulative errors, and shall be operated before starting work normally.

7. **【X-】【X+】【Y-】【Y+】【Up】【Down】**

Move the cutting head. Click the direction keys to move the cutting head. Press to move, release the button, the cutting head will stop moving.

8. Mark Cut

Click “” to start mark cut function.